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ORIGINAL ARTICLES.

NEW IDEAS WITH REFERENCE TO TWO WELL-KNOWN OPERATIONS.

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I. THE AMPUTATION OF THE TONSILS.

EXCISION of the tonsils is one of the most frequent operations in the vicinity of the mouth that the surgeon is called upon to perform. Notwithstanding this fact, there are at the present day but few operators who will enter upon its performance without a certain degree of hesitancy or trepidation.

The prime cause of this uneasiness on the part of the surgeon is, as we all know, the danger of alarming hemorrhage. At a meeting of the New York Academy of Medicine in February, 1893, the subject of tonsillar excision was pretty thoroughly discussed. Regarding the extraction of tonsils by means of the knife or guillotine, Dr. Morris J. Asche, under whose auspices the meeting was held, said that it was an extremely dangerous operation. He "did not mean to say that it was a difficult one to perform, but that there might be abnormal arterial distribution causing hemorrhage which could not be controlled." Dr. Asche furthermore stated that danger of serious hemorrhage could be referred to three sources: (1) abnormal distribution of vessels; (2) the venous plexus behind; (3) profuse capillary bleeding. The vessels being enlarged in hypertrophy of the tonsils, they are liable to remain open when divided, and thus cause serious hemorrhage. In the discussion that followed these remarks, although many of the gentlemen did not hold extreme views, yet, on account of the danger of hemorrhage, the majority were inclined to favor the substitution of other and less dangerous methods than the knife or the guillotine for the removal of hypertrophied tonsils.

The principal methods advocated as substitutes for the knife in tonsillotomy are three in number, viz., galvano-puncture, the cautery-snare, and the cold snare. Galvano-puncture, as its name indicates, consists simply in puncturing the enlarged gland with the cautery-needle, endeavoring in the operation to destroy as much as possible of the superabundant tissues.

Those who advocate this method advise that several punctures be made at a single sitting, in order to reduce the number of operations. Under the most favorable auspices, unless, forsooth, the portion to be removed is very small, galvano puncture will require not less than a dozen sittings to produce any decided result.

To those accustomed to make applications with the galvano-cautery, it is unnecessary to state that the pain produced by this method of operation offers quite a serious obstacle to its employment. Another decided objection is the frequency with which abscesses are produced in the punctured glands on account of blind pouches. Again, severe reaction will generally follow each operation, and not only produce much suffering, but also tend to the formation of connective tissue.

With reference to children, this form of operation should never be entertained, not only on account of the pain engendered, but also on account of the length of time required for its performance. When the gland to be removed is of large caliber, galvano-puncture is likewise impracticable, as the patience of the sufferer will have become exhausted long before the operation is completed. It is but fair to state that Dr. Knight, who is in a measure responsible for this method of operation, says that there are only four conditions in which he would resort to galvano-puncture: (1) when one can distinctly recognize vascular anomaly; (2) when the tonsil is deeply buried; (3) when there is hemophilia; (4) when the patient absolutely refuses to be cut. Personally I have had but a single experience with galvano-puncture, the patient, an adult male, falling under the fourth classification of Dr. Knight. When the operation was about half completed the patient stated that he had had quite enough and readily consented to the use of the tonsillotome.

When the snare came into general use several years ago for the extraction of polypoid and other tumors, it was hoped that an instrument had at last been found that would effectually take the place of the tonsillotome.

This hope, however, proved groundless, as practical experience has taught us that the pain attached to the removal of a tonsil with the cold-wire snare is of such an intense character as to preclude its employment. The cautery-snare offers many advantages over the cold wire, and has many advocates. The principal advantages of the former

method are twofold: the operation can be more rapidly performed, and there is much less pain. Several methods of tonsillar reduction other than those tabulated have been from time to time advocated, the principal of which are injections into the body of the gland, and local external applications of caustic or astringent solutions.

At the present time, however, these latter forms of treatment are but little employed.

The only operation which, according to my view, should be resorted to for the removal of hypertrophied tonsils is excision with the tonsillotome.

It is undoubtedly the consensus of opinion of all surgeons that, barring the one danger of hemorrhage, the removal of the tonsils by means of the guillotine is *par excellence* the speediest, the safest, and the most thorough method. In my estimation the dangers of hemorrhage have been greatly overestimated. During sixteen years' experience in both hospital and private practice, in which I have operated upward of five hundred times, I have met with but a single instance of alarming hemorrhage. The bleeding in the case referred to—an out-door dispensary patient—consisted of a slight oozing which continued for several days, the patient being under the care of a homeopath who virtually did nothing. A single application of the galvanocautery stopped the hemorrhage, and the patient, although he had lost a great deal of blood, made a good recovery. Although there are several cases of alarming hemorrhage on record from tonsillotomy, yet there does not seem to be an authenticated case of fatal termination. With regard to abnormal distribution of the carotid, the fear of which has led many to abandon the operation: even though such a condition should prevail, there is no danger of its severance providing the operation be performed properly.

The question that has prompted the writing of this paper is: Can the hemorrhage following tonsillotomy be prevented? If this query can be answered affirmatively the only obstacle to the use of the tonsillotome will be removed, and excision by means of this instrument will be elevated to its proper position in buccal surgery.

About two years ago, yielding to the popular demand, I began to use a 4 per cent. solution of cocain in the form of a spray, from ten to fifteen minutes prior to the operation.

After operating several times on cocainized tonsils, I noticed that the bleeding immediately succeeding the severance of the glands was considerably less than that which it had been my custom to meet with before I had made use of the cocain-spray. After using the spray for about six months I resorted to the use of an 8 per cent. solution, and instead of applying it in the form of a spray, I injected the drug deep into the body of the gland to be removed, allowing an interval of about ten minutes to intervene before operating. The results were beyond my expectations. In a series of twenty cases not more than a dram of blood was lost in any individual case. Those gentlemen who are accustomed to operate in the nasal cavities are thoroughly acquainted with the retractile action of cocain upon the turgid membrane. In cases of small swellings a single application of cocain will oftentimes cause them to disappear entirely for the time being. Another well-known fact is that tissues over which the cocain-solution has been applied will present a blanched appearance for quite a time. This latter effect is the direct result of the peculiar contractile action of cocain upon the plexus of bloodvessels. In the case of excision of the tonsils, cocain undoubtedly contracts the mouths of the vessels in the same manner, and when they are severed holds them so until coagulation takes place. If the tonsil be inspected a few moments after the cocain injection the pallid appearance mentioned with reference to the nasal mucous membrane will likewise be noticeable, although it will not be quite so marked.

Although the cocain when used in the manner indicated proved highly satisfactory, the thought occurred to me that possibly less bleeding would occur after excision of the tonsils if some styptic were to be combined with the cocain and the resulting solution injected in the manner already described. After some little experimentation with different solutions the following formula was used:

℞.—Sol. cocain. hydrochlor. } . āā 10 per cent.
Sol. ferri subsulph. }

Of ten cases in adults experimented upon with this combination, in four the operations were practically bloodless, while in the remainder the bleeding consisted of but a slight oozing from the stump, and this continued but a few moments.

In all of my cases an ordinary hypodermatic syringe was used and the needle inserted successively at several points deeply into the body of the gland and beyond, if possible, the point of severance. The amount of the solution injected was from 30 to 60 drops, the endeavor being made to insert as much as the body would hold.

As a result of these researches I have every reason to believe that this combination of cocain and iron will prove of inestimable value in controlling tonsillar hemorrhage. As I have already shown, the effect of cocain is to constrict the bloodvessels, and if we add to this action the coagulating powers of the ferrous solution it would be but natural to infer that any ordinary bleeding should be entirely controlled. With regard to the

secondary hemorrhages that not infrequently follow tonsillotomy, I have not had a single instance since using the cocain-preparations. My opinion of these accidents is that the sudden shock to the system produced by the operation causes a temporary diminution of the blood-supply to the gland, and that, when the normal circulation is reëstablished, the mouths of the severed vessels not being contracted, alarming hemorrhage is produced.

The successful performance of tonsillotomy depends in a great measure not only upon the style of instrument used, but also upon the manner in which the operation is performed.

Many surgeons recommend the French tonsillotome as the most efficient instrument. There is one decided objection to the French guillotine, and that is, that being provided with a prong or pair of prongs, a preliminary spiking of the gland is necessitated. This transfixion of the hypertrophied gland not only unnecessarily compromises the operation, but seems to drag the gland too far out of its bed, which in unskilful hands endangers a too deep cutting. It is probable that some of the cases of severe hemorrhage on record were produced in this manner. The majority of experts favor the employment of the late Dr. Mackenzie's tonsillotome. One will seldom meet with a tonsil requiring the exhibition of the knife that cannot be thoroughly extracted with this instrument.

If there is not enough of the gland exposed to be included in the ring of the tonsillotome, external pressure by an assistant's hand will generally cause a sufficient protrusion. There is one fault with regard to Mackenzie's tonsillotome that has not hitherto seemed to have been overcome, and that is the knife, being pushed backwards through the body of the gland, will readily slip off the tonsil unless this be snugly encircled in the ring through which the blade plays.

To obviate this difficulty I have designed a special instrument which, it seems to me, should accomplish the purpose for which it was invented.

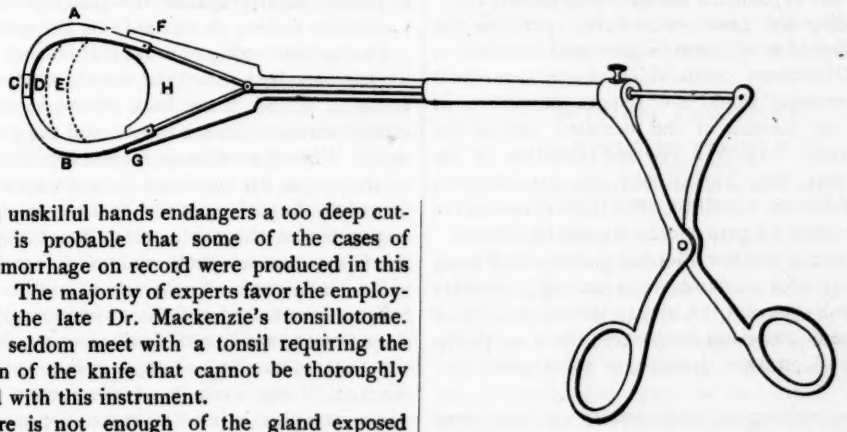
In this instrument the knife-blades, A B, are united at C by a loose joint, the ends, F G, being connected with a central rod to which the handle is attached, in the manner shown in the drawing.

The size of the ring designed to encircle the tonsil is regulated by the movements of the scissors-handle (see dotted lines, D E), the loose joints at F and G playing up and down in slots in the V-shaped framework, H.

The principal feature of this instrument is its adaptability to tonsils of any size. The knife-blade circle, as shown by dotted lines, can be regulated to any desired size either before introduction into the mouth or after the tumor is encircled. Another feature is that when the instrument is operated the blades are compressed laterally as well as drawn from behind forward, thus insuring incision on either side with the backward cutting. This constriction of the gland on either side insures a much better purchase and reduces to a minimum the danger of slipping.

There are several special points that should recommend the adoption of this style of tonsillotome:

1. It is universal in its character—one instrument taking the place of the several different-sized guillotines previously required.



2. Small portions of tonsils can be as readily nipped off as large ones.

3. It is rapid in its action on account of the gland being severed laterally as well as from behind forward.

4. The blades, being turned inwards and sinking at once into the body of the gland, require no guards.

5. Its mechanism is exceedingly simple and cannot readily be disarranged.

The manner in which an enlarged tonsil is removed with this instrument is as follows:

The tonsillotome, being set to the proper size, is to be firmly grasped in the hand on the same side as the tonsil to be excised; the instrument is now introduced, the gland encircled, and forcible pressure exerted upon the handle of the tonsillotome, using the thumb as a lever, the operation being completed as speedily as possible.

The use of a tongue-depressor in tonsillotomy is not only unnecessary but also decidedly detrimental. No matter what style of tonsillotome be used, the operation can best be performed by pressing upon the exposed side of the instrument by the forefinger of the disengaged hand, introduced well into the mouth. The object of this manipulation is to keep the ring well down upon the tonsil until the latter is firmly grasped.

There seems to be much diversity of opinion regarding the amount of tonsil that should be removed. Many surgeons advocate the extraction of as much as possible of the hypertrophied gland. Such advice is not only erroneous but positively harmful, in that it engenders a too deep cutting, and should there chance to be an abnormal distribution of the vessels a dangerous hemorrhage might be the result.

According to my experience the superfluous portion only of the enlarged body should be removed. An excellent plan to follow in this operation is to remove only that portion of the hypertrophied tonsil that juts out beyond the pillars of the fauces.

Regarding the cases selected for operation the surgeon should at all times be governed by common sense. Oftentimes tonsils which in one case would require removal would not require extraction in another, on account of the increased size of the buccal cavity. Again, a diseased condition of the tonsils other than hypertrophy, as, for instance, chronic follicular tonsillitis, oftentimes demands the operation before a permanent cure can be effected.

As a general rule tonsillotomy is demanded when the tonsils offer obstacles to breathing; interfere with speech; prevent full play to the velum; hinder the escape of post-nasal discharges; interrupt deglutition; and produce deafness or other aural difficulty.

In the writing of this article it has been my earnest endeavor to demonstrate that the oft-neglected operation of tonsillotomy should be performed by the surgeon without the slightest degree of hesitation, provided the subjoined precepts be observed:

1. The proper selection of the cases for operation.
2. The injection of cocain and iron.
3. The selection of the proper instrument.
4. The proper performance of the several steps of the operation.

II. The Amputation of the Uvula.

The amputation of an elongated uvula, although generally considered an exceedingly simple operation, oftentimes requires the exhibition of a great amount of skill.

In a paper that I contributed several years ago to the columns of the *American Journal of the Medical Sciences*, I had the pleasure of directing the attention of the medical profession to the importance of the uvula from a physiologic standpoint, and to the danger of injuring the voice by a too free exhibition of the knife.

In order to be thoroughly understood by those not acquainted with the subject, it will be necessary to give a brief *résumé* of the subject in the present paper.

The tone-waves that are created by the vibratory action of the vocal bands pursue three different courses in their journey from the body, viz.: through the mouth; through the nasal organs; and through the mouth and nose combined. The direction that each wave takes depends entirely upon its position in the voice-register. During the vocalization of sounds that pass through the nose alone, the velum rests throughout its entire extent upon the dorsum of the tongue, thus shutting off all communication between the cavities of the mouth and posterior nares. During the intonation of sounds that pass through the mouth alone, the soft palate is pressed tightly against the pharynx, the tone-waves thus finding an exit only by the mouth.

During the singing of tones that issue in the same degree from both nose and mouth, the pendulous velum is poised in the back of the mouth at an equal distance from the tongue and the pharyngeal wall. When the velum is pressed against the back of the tongue the uvula lies dormant upon the surface of the lingual organ; when, however, the palate begins to rise, the uvula, which has hitherto been inactive, stretches itself suddenly, becoming an active participant. As the velum recedes from the tongue, the attached uvula rises and accompanies it in its journey upward, until finally its tip only touches the back of the lingual organ; when this point is reached, if the uvula is of the normal size, the velum occupies the median line of the mouth—that is to say, it is equidistant from the tongue and the pharynx. At about this time, as the vocalist proceeds in the ascending scale, the uvula will be seen to be drawn speedily upward, producing a prominence on the posterior surface of the soft palate. This eminence increases in size as the uvula is drawn upward, and reaches its maximum when the latter body has retreated to its fullest extent. The function of this posterior palatine eminence is to act as a support to the velum by impinging against the posterior pharyngeal wall.

The function of the uvula, then, is to act as a prop to the velum, using the tongue as a basis of support during the rendition of the lower half of the register, and the pharynx during the production of the upper half. If the velum were to be deprived of this support, an undue amount of vibratory action would be superinduced by the escaping tone-waves, which would impart an abnormal amount of

tremulousness to the voice. When the uvula is abnormally long it will be utterly impossible for the velum to perform the movements described in a proper manner, on account of the extra weight imposed by the elongated body.

The amputation of the excessive portion of the uvula then becomes a paramount necessity. We come now to a consideration of a highly important point, the determining of the amount of an elongated uvula that should be removed. The settlement of this point is oftentimes a difficult matter, as a uvula that might be of a sufficient length to interfere with the vocalatory efforts of one individual, would be of the proper dimensions in another person, on account of the difference in the size of the cavity of the mouth. An excellent rule to guide the surgeon in the settlement of this point is to gently depress the tongue, allowing it to arch slightly at the base, at the same time instructing the patient to relax his velum. If the uvula is of normal length its tip will just touch the arched portion of the dorsum of the tongue; but if, on the contrary, it is elongated, the superabundant portion will lie flaccid upon the lingual organ. With reference to the style of instrument used in amputating the uvula I would say a word. It would naturally seem to the uninitiated that the guillotine would be the simplest and most effective instrument with which to perform this simple operation. Such, indeed, would be the fact if the patient could always be depended upon to hold the velum perfectly quiet. But unfortunately the reverse of this statement is the rule, the velum being prone to change its position upon the slightest provocation; and should this accident happen at the instant the knife is sprung, an undue amount may be amputated, and the important function of the organ destroyed. I have seen this result follow the use of the uvulatome many times, and doubtless other surgeons have had the same experience. The manner in which the amputation of the uvula is generally performed is as follows: The body is grasped just below the point of severance by means of an ordinary pair of spring-forceps held in one hand, and the excessive portion is snipped off through the agency of a pair of long curved scissors held in the disengaged hand.

There are several decided objections to this method of operation. In the first place, the assistance of the patient is always required to handle the spatula. In many cases, on account of age, nervousness, or other cause, the aid of the patient cannot be relied upon. In the second place, it is difficult to gauge the proper amount to be severed, because the dragging of the body forward with the forceps has a tendency to lengthen it. Again, on account of the pulling forward of the body to be amputated, the stump left after the operation is inclined to be very irregular.

I have lately devised an instrument which I feel certain will obviate these difficulties.

This device consists essentially of two distinct instruments united, namely, forceps and scissors —the arms of the latter being attached to a rod by which it can be operated forward and backward. In manipulating this form of uvulatome the rod is pulled out to its fullest extent, which closes the scissors; the curved handles of the forceps is then grasped, the thumb resting on the thumb-piece of the rod. The uvula is now seized at the point of severance by the jaws of the forceps and clipped by pushing the rod home. The scissors-portion of the instrument is made to rapidly open and close by the revolution of the handles around a curve located on either arm of the forceps. The advantages of this instrument can be seen at a glance:

1. But one hand being necessary to operate it, the other is left free to operate the spatula.

2. The surgeon can see what he is doing at all stages of the operation, and need make no mistake.

3. The stump will be perfectly clean and even.

PHYSICAL EDUCATION.

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PHYSICAL education is a subject about which a great deal is being written. This is due to the fact that within the last ten years all the leading colleges, academies, and schools for men, women, and children have paid greater attention to the ever-increasing demand for knowledge. Realizing that the human mechanism must be in perfect order to accomplish the best mental results, these institutions have seen the necessity for making the structures well balanced in body and mind. Numerous are the statistics that certify to the good results that physical education has accomplished. Yet one must not imagine for a moment that physical education will apply to all constitutions; it will not, as I hope to show a little later. Education, properly speaking, has to do with everything that will develop any part of the human frame, mentally, morally, physically, or spiritually. In using the word education, I might more properly have said every department of the being Man, in the generic sense, because no one department can be educated unless some one or other department suffers. Do we not see thousands of men and women who forget all about their spiritual nature, while their mental nature predominates over worldly things—beings who seem to have lost all traces of spiritual instinct, although they have wonderful mental capacity and physical development, becom-

ing in fact monstrosities, because there is an utter lack of equilibrium between the parts of their being which depend for their support upon the coördination of every part.

The majority of schools for physical education are empiric because those having charge of them know absolutely nothing about the construction of the human frame and the laws governing the different physiologic phenomena taking place therein. I venture to say that it has never entered the minds of scores of teachers of physical education that many of their pupils are those who, in the first place, do not need physical work, but who need absolute rest, and this rest must frequently extend over a long period. Those who are familiar with the "rest-cure" of Dr. S. Weir Mitchell well know how essential is rest for thousands of persons. Ignorance of a want of rest to begin with—and I mean absolute rest in bed in some cases—has led many a man to his grave who has thought to find a panacea in physical culture. Movements are a most potent means for affecting the body, as potent as drugs, and is it any wonder that so many men die with diseases of the lungs, the heart, or the nervous system, and their associates, when these movements are prescribed by an empiric? Imagine a man practising medicine without a degree, and how much faith would any sensible patient have in him. Quackery is practised every day in physical education, and in many ways; for example, men who have lung-troubles, or a great predisposition thereto, are prescribed movements with chest-weights (because these men usually have hollow, narrow, and contracted chests), which will exercise the muscles covering the chest and back, and the movement is frequently too violent for the pulmonary condition, no matter how slight it may be, the result being an aggravation of the trouble instead of its alleviation. In another case a person who has cardiac palpitation, or it may be valvular disease, is told to take a light run; a third is told to use the high pulley and is shown certain movements for the lower or lumbar region of the spinal column, in order to develop certain muscles there. In this region will be found the kidneys, and they are surrounded on all sides by muscles and bound down by tissue. Imagine a man being told to perform such a movement for a weak back, when the weakness he complained of was due to disease of these organs. It amounts to just the same thing as telling a person who has worked too hard mentally to keep on working; in both cases the trouble is aggravated, and anyone can see the folly of such a course.

How many persons who think of taking a systematic course of physical work ask themselves the following questions: Do I need any work at all? If I need work, what kind do I need? How much do I need? What is the most proper time for exercising? How am I to know whether it is benefiting me or not? What is the state of my constitution? Are there any accessory conditions I must observe, and what are they?

I have already shown why it is important for a person who anticipates taking a course in physical work to undergo a rigid medical examination at the outset, but it will not be amiss for me to strengthen the importance of this by saying that in cases in which disease of the heart, lungs, or kidneys exists, there is danger of causing sudden death by the use of apparatus. When exercise is doing good the resulting phenomena will be as follows: Increase in appetite; regularity of heart-impulse; increased pulmonary capacity; bright color of skin; increase in size and tone of muscles; increase in bodily weight (training excepted); and good sleep. If it be causing harm we have the following symptoms: Appetite impaired or lost; irregular impulse of heart; pallor of skin; decrease in size and tone of muscles; loss of weight; headache; nervousness, causing sleeplessness; slight fever, which resembles typhoid; and a dry throat, at times followed by a slight cough, which not infrequently leads to bronchial or pulmonary complaint.

Every movement of the body is simply a physical expression of a nervous impression produced either by the brain or spinal cord, and in all voluntary movements the primary impulse starts from the brain; hence we see that movements develop not only physical powers but cerebral powers as well. If a person wishes to arrive at a healthful development of his body, he must begin with the primitive type and gradually advance in alphabetic order, just as a child does when it is taught to read. A proper coördination of any movement depends upon a proper state of the mind; hence we see that if the mental faculties are not in a condition of stability, the body as a whole is not in harmonious accord with the mind. If an exercise is to be correctly performed it must be based upon the temperament and character of the person who is about to perform it, so that each department of his whole being will work in harmony with its fellow-departments; it is in this way alone that the human organism will become capable of perfect development, thus bringing its several parts into perfect harmony.

There is a limit to the powers of every being upon earth, and with man it will be found that this limit is fixed by his bodily powers, as well as by his mental faculties. If a movement be applied incorrectly, the faculty of an individual will not infrequently be perverted, and therefore we see that such a movement is injurious, and detrimental to symmetric development. The over-development of one part is always accompanied by a corresponding weakness

in its sister part. We all know how very helpless the left hand of myriads of persons is. This is very easily explained. In our bodies will be found a certain quantity of blood, about one-twelfth or one-fourteenth the body weight; exercise increases the flow of blood to a part; we exercise our right arm more than our left and more blood goes to it. We continue to use it, and the bloodvessels being nothing more than elastic tubes, expand and after awhile their caliber becomes permanently larger, and as fluids flow in the direction of least resistance, a greater quantity of blood goes to the right arm than to the left, and the left suffers to a greater or less extent; the result being that the left arm grows smaller according to its decrease in blood-supply, while the right grows larger in proportion to the amount of blood it receives. This principle applies not only to the upper extremities, but to all parts of the body. Symmetry of body in its broadest sense, *i. e.*, spiritually, mentally, morally, socially, physically, and politically, is the great aim of all properly prescribed exercise, because healthful power is due to a simultaneous action of all parts of the body, and to produce power and motion in such a way that the maximum force may be attained, it must coöperate simultaneously in every part.

From this we see that the terms physical force and perfect health are correlative, as both depend upon harmony among all parts of the human organism. If one will begin with the simplest kind of exercise and gradually advance, he will be able in due time to accomplish feats that were well-nigh impossible at first, and without danger of jeopardizing his constitution, as he will acquire an instinctive knowledge of what he is capable of undertaking. It is when one does not regard this knowledge that disease is produced.

If we classify the different phenomena that take place in our bodies, we may put them under three heads: mechanical, chemic, and dynamic. The first include circulation, deglutition, mastication, respiration, etc.; the second, nutrition, sanguification, secretion, excretion, assimilation, and the like; and the last are merely evidences of the mind which we see in our intellectual and moral powers. Every vital act, no matter how small or how great it may be, is produced under the combined influence of these three classes of phenomena, and it is by their conjoint action that a perfect organization characterizes itself; moreover, when this action is disturbed, an alteration in function takes place, and this in nearly every case is followed by disease. If the harmony of any one part be deranged it may be reëstablished by increasing the vital activity of the part, and this can be accomplished more perfectly by exciting the blood-current by exercise than in any other way, thus supplying a natural means, which is physiologic in nature, instead of using drugs that are therapeutic in their nature, and are used to change pathologic to physiologic conditions. Many persons laugh when they are shown free movements, because these movements are so simple; but it is frequently from their simplicity that the good is derived which one receives.

Variety of exercise is a most important factor, in bodily as well as in mental work, because by changing from one form of exercise to another, different sets or groups of muscles are used, while others are at rest, and in this way there is less danger of overworking the body. The special kind of exercise one usually needs can only be mapped out by a physician after making a most thorough medical examination. Strict attention should be paid to the prescribed course and a faithful pursuance of it until the body becomes symmetric.

Physical culture for women is most beneficial, and nearly every woman needs it in a greater or less degree; yet there are some for whom it would be certain death, and especially so when prescribed by an empiric. Women's occupations are more sedentary and their exercise must be simpler and lighter than that prescribed for men, because their muscles are weaker. As a rule one will find that women are very weak and poorly developed about the arms, back, and chest, while their lower extremities are well developed; so much so that the figure is anything but symmetric. Exercises can be prescribed that will change, strengthen, and develop the arms, back, and chest, giving as a final result a symmetric figure. More care is necessary in prescribing exercise for women, because by making inquiry into the heredity of most women, we find that their mothers, grandmothers, and great-grandmothers have never taken any exercise whatsoever; but with men such is not the case, and we find that for generations exercise of some sort or other has been indulged in by the father. If persons knew a little more about the scientific care of themselves, the tendency to disease would be greatly diminished, and in diminishing this tendency I am sure there would be an increase in their moral and spiritual attributes. I have seen many a person changed, by observing scientific rules while in training for an athletic contest, from a state of immorality to one of noble-mindedness; and I feel sure that this was due to the fact that the training, which caused the elimination of certain waste materials which are bodily depressants, brought new life to him, thus enabling him to develop qualities which were blunted or made dormant by the retention of these materials.

Persons in exercising should always remember that the exercise indulged in should invariably keep pace with one's strength. A disregard of this will

unquestionably, sooner or later, produce disease of some kind. Over-ambition and anxiety have sent many strong healthy men and women to premature graves. I venture to say that nine-tenths of all persons who take exercise, rarely if ever ask themselves the questions I have enumerated, and even when such has been the case, have never followed a prescribed course under the care of a specialist. If those who need a course of exercise would consult an experienced physician, just as they do when attacked by disease, there would not be the predisposition to disease caused by the thousand and one apparatuses in existence.

THE PROGNOSTIC SIGNIFICANCE OF TUBE-CASTS.[1]

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No physician in active practice need be reminded of the fact that, although every physician will admit the desirability of having data from which he can predict the probable result in a given case of chronic nephritis, as yet no such reliable data exist.

Without stopping to discuss the general symptoms of chronic nephritis, for the purpose of estimating their prognostic significance, I will pass at once to the subject before us, and announce my conviction that the study of tube-casts furnishes the best basis for a reliable prognosis in any case of inflammation of the renal parenchyma.

This brings us to the first practical question, namely: What do we mean by "tube-casts"? The answer is verysimple: Tube-casts are cylindriform bodies formed in the renal tubules, accurately representing the caliber and condition of the tubules in which they are found. This is equivalent to saying that the casts disclose the pathologic status of the tubules, and that by studying the casts from time to time, the progress of a given case toward recovery, or the reverse, may be followed.

An important preliminary to the study of the prognostic indications of tube-casts is a recognition of the varieties and their proper grouping or classification. Obviously the classification of tube-casts should be based upon their pathologic derivation, if this can be determined, as I think it can in all cases. A practical study of tube-casts, in connection with other clinical manifestions of renal diseases, will convince the observer, first, that all tube-casts are the result of some form or some degree of nephritis; second, that certain casts are the product of, and therefore denote, non-exudative inflammation, which is nothing more or less than a simple catarrhal inflammation as limited and defined by Ziegler; third, that certain other casts are the product of, and therefore denote, exudative or croupous inflammation; fourth, that each class has its varieties, which are easily recognized by characteristic and uniform peculiarities of structure, and that these peculiarities of structure are associated with, and therefore denote, characteristic and uniform pathologic lesions. Consequently I am justified in assuming and asserting that the tube-cast, if properly studied and understood, sustains the most important relation to prognosis. On pathologic grounds I suggest the following classification:

VARIETIES OF TUBE-CASTS.

1. Casts of non-exudative origin.
   - *a.* Mucin-casts (or mucous casts).
   - *b.* Mucin-casts enclosing cell-forms.
   - *c.* Mucin-casts enclosing crystals.
2. Exudative casts (fibrinous casts).
   - *a.* Hyaline casts.
   - *b.* Waxy or amyloid casts.
   - *c.* Blood-casts.
   - *d.* Epithelial casts { small. / large.
   - *e.* Granular casts { small. / large.
   - *f.* Fatty casts { small. / large.

The prognostic inferences to be derived from casts are based:

First. On the origin of casts, whether non-exudative or exudative—that is, whether mucous or fibrinous. If the former, it establishes the fact that the lesion is a catarrhal one only, and therefore at the worst is limited to a cloudy swelling of the renal epithelium, a condition that always warrants a favorable prognosis; if the latter, it warrants the conclusion that a true croupous inflammation, with characteristic exudation, is present, and the prognosis must be reserved until after mature and deliberate investigation has been made.

The general professional opinion is that these mucous casts are practically of no importance so far as regards prognosis or treatment; but it is nevertheless true that they constitute a certain indication of the approach of true chronic nephritis, and it is only a question of time when catarrhal nephritis, as indicated by mucous casts, will become croupous or exudative nephritis, with characteristic hyaline casts.

The general professional opinion is that hyaline casts are scarcely less than a death-sentence—at least that recovery is very unlikely to occur after true fibrinous casts have appeared. But my experience during the past ten years fully warrants me in asserting that recovery is not uncommon, and

[1] The Address in Medicine before the Illinois State Medical Society, at its meeting in Chicago, May, 1893.

ought not to be unexpected after the presence of hyaline casts denotes the development of a true croupous nephritis.

Second. The prognostic significance of casts depends upon their size, or diameter. This applies to a certain extent to all casts, but more particularly to the epithelial and fatty varieties. In my classification I have included "small" and "large" casts. The small casts are formed in tubules that are not yet denuded of their epithelium, and therefore are not essentially damaged by degenerative changes. They point to the fact that the caliber of the tubes has not been increased by exuviation of their epithelium, and hence they *must* have been formed in tubules whose functional capacity is not materially diminished. Such casts warrant a fairly favorable prognosis, as it is not unreasonable to expect that tubules that still retain their specialized functional cells, although somewhat swollen and cloudy, may recover both their structural and functional integrity, and experience abundantly confirms the foregoing prophecy. On the other hand, casts of large diameter originate in tubules from which the epithelium has disappeared, either in flakes or patches, by a process of exuviation, or else singly, or by twos and threes, on account of degenerative changes. This indicates a condition of great gravity, and always requires an unfavorable prognosis, because it furnishes infallible proof that tubules so denuded are no longer endowed with functional power. But if large and small casts occur in association, and if the small casts predominate, thus indicating that the majority of the tubules still retain their epithelium, a possible recovery may be predicated.

Third. The prognostic significance of casts depends upon their regularity or symmetry. A straight symmetrical cast, of uniform size and appearance, must have been formed in a tube not yet distorted and twisted out of shape by the encroachment of pathologic connective tissue. It indicates, therefore, the absence of cirrhotic change, and certainly shows that the tubes in which the casts in question were formed have not been damaged by pathologic intertubal deposit. On the other hand, if the cast is distorted, twisted, and asymmetrical, it unerringly points to the fact that it was formed in a distorted, twisted, and asymmetric tube—a tube environed and strangulated by connective tissue, abnormal as to locality, quantity, and behavior. In other words, it proves that the process of cirrhosis is well advanced and that the kidney is damaged beyond any possible recovery. Treatment may retard the progress of the disease, but the ultimate history of the case is fixed beyond recall. In all cases of renal cirrhosis—especially those of rheumatic or gouty origin—this point is an exceedingly important one, as the prognosis must necessarily depend upon the degree of renal cirrhosis present, and I know of no way to decide the matter except by a microscopic study of the tube-casts; and this, in my belief, does furnish an accurate and reliable basis for a medical judgment far superior to any opinion based upon general symptoms only.

So, also, in the late stage of tubal nephritis, the roughened, decayed, or "nibbled" appearance of the casts shows conclusively that the tubes wherein they were formed are undergoing advanced fatty degeneration, and the case must be regarded as utterly hopeless.

Fourth. The prognostic significance of casts depends upon their structure or constitution. It is probable that all except mucous casts are primarily fibrinous; that is, are formed by the union and coagulation of the fibrin-factors. Without stopping to argue this proposition I shall assume it to be true, merely adding that it is an opinion that would not be universally accepted. The contents or structural factors of casts vary greatly, and each different factor, or group of factors, tells its own story.

The hyaline or structureless cast denotes croupous inflammation in the early stage, before degenerative changes have commenced, and, in the absence of other and more portentous casts, warrants a favorable prognosis.

The hyaline blood-cast, or the hyaline cast loaded with blood-globules, denotes a renal hyperemia so intense that some of the delicate renal vessels have been ruptured, and that hemorrhage has occurred. Of course this proves the presence of an acute process, although it may be an acute exacerbation in the course of a chronic lesion. If the former only, a favorable prognosis is warranted; if the latter, the prognosis will, of course, be very grave.

The import of epithelial casts—that is, the hyaline casts loaded with renal epithelia—will depend very much upon the condition of the cells. If they have undergone no essential pathologic change, but are simply exfoliated cells entangled in the cast, a favorable prognosis is warranted on theoretic and practical grounds. Recoveries are by no means uncommon under such circumstances. But if the contained epithelia have undergone, or are in the incipient stage of, fatty degeneration, the prognosis is always grave. In fact, the gravity of the case is in exact proportion to the extent of fatty change shown by the renal epithelium. Of course, I am not now taking into account cardiac or other complications, as it is the purpose of this paper to deal with tube-casts and their relations to prognosis only.

When the tube-casts become granular, or distinctly fatty, the prognosis has at least the positive character of certainty. It is certainly, positively, and unerringly bad. The fatal result may still be

far off—in fact, partial recovery may take place—but it will prove nothing more than a delusive calm, sure to be followed by a fatal outbreak sooner or later.

Fifth. The prognostic significance of tube-casts depends upon their relative numerical proportion. If hyaline and epithelial casts exist together, but with a predominance of hyaline casts, the prognosis is less grave than when epithelial casts predominate. If fatty and epithelial casts exist together, and the former predominate, the case is in more immediate danger than it would be if the conditions were reversed. This rule holds good as regards all other combinations of casts as they appear in clinical experience.

I hold, therefore, that the systematic study of tube-casts furnishes the most satisfactory and reliable groundwork for prognostic conclusions in each and every case of chronic nephritis. I do not undervalue other symptoms or indications; I only claim that the prognostic significance of casts has been greatly undervalued, and I ask for them a proper place in future prognostic calculations.

ATHEROMA.

BY DOUGLASS W. MONTGOMERY, M.D.,
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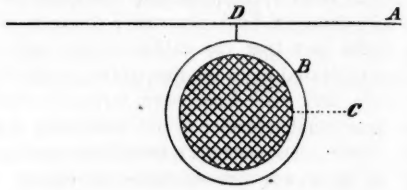
ALTHOUGH operations for the removal of atheromata may be followed by disease of the wound, such as erysipelas, usually the healing takes place so quickly that surgeons have been again and again surprised at the good results. This was especially noteworthy in the old days, when cleanliness was not so customary as at present. But men are still found boasting that they can make large wounds in the scalp without anything serious following, and with remarkably rapid healing; the truth is they have made a mere scratch. It is a good thing to tell of one's happy results, but, in the present case, it would be more to the point if the real reason of the rapid return to the normal were given, instead of attributing it to skill, to the sharpness of the knife, or to the use of any particular form of antiseptic.

The real reason for the rapid healing can easily be seen if the pathologic anatomy of the affection be for a moment thought of. Let the line *A* represent the surface of the skin, the circle *B* stand for the true connective-tissue capsule of the wen, and the circle *C* represent the hard, glazed, horny capsule of epithelium covering the central detritus. It is this inner circle that has given rise to misunderstanding, for men frequently teach that this is the outside connective-tissue covering of the tumor, whereas the real connective-tissue capsule is represented by the outer circle.

The wen must be regarded as a globular cavity of connective tissue, lined with flat, stratified epithelium; it is, in fact, a piece of involuted skin, the connection of which with the outer surface of the body has become obliterated. The epithelium of this piece of skin is being continually thrown off, but instead of being shed, as it is on the outer surface of the body, it is heaped up in the center, and there forms a mass of detritus.



In operating, an incision is made over the most prominent part of the tumor, and an ivory-like, slippery ball is exposed, which readily pops out through the slit. There usually is, as in all scalp-wounds, considerable bleeding.

Now what has the operator done? The slit that he has made in exposing the ivory-like ball is positively the only wound that exists. The sac out of which he has pressed the ball is not a raw surface, but a piece of epithelium dipped down into the skin, and as sound and healthy as the skin on the back of the patient's hand, and ready, like that of the hand, to continue to throw off its epithelium, which, in time, will form a new ball. Those who suppose that the inner surface of this sac is raw will say that it is red and moist, and that surfaces covered with epithelium are neither red nor moist. This surface is, indeed, both red and moist, because it is the rete Malpighii, the covering of the ball being formed by the more completely keratinized cells of the granular and horny layers.

My attention was first called to the anatomy of a wen by examining a section of the wall of one of these glistening balls, and finding it not connective tissue lined internally with epithelial cells, but constituted entirely of epithelium, with some layers of flattened nucleated epithelial cells forming its external covering. That settled its nature, and I saw that an operation, to be radical, must go outside the connective-tissue capsule. But whether or not it is desirable to do this radical operation is another story, for the real connective-tissue capsule is, as Cruveilhier long ago showed,[1] very delicate, and would be very difficult to dissect out. On the other hand, the slow refilling of the sac is a comparatively unimportant matter.

After evacuating the cavity the farce of curetting

[1] Cruveilhier: Traité d'Anatomie Path. gén., tome iii, p. 346. Quoted by Virchow, Die krankhaften Geschwülste, Band i, S. 227.

it or swabbing it out with a caustic solution, is sometimes indulged in. Except in cases in which the horny capsule adheres to its base, curetting does harm by wounding the otherwise intact wall.

The term "atheroma" is to be preferred to that of sebaceous cyst, because the latter term would indicate that all such tumors are retention-cysts of sebaceous glands, and this is not so. Probably the vast majority of these tumors are formed by embryonic displacements of external epithelium. At all events a cavity is formed, lined with epithelium. The word atheroma, meaning literally, *porridge*, and only having reference to the appearance of the central mass of detritus, indicates no theory, and is therefore unobjectionable. The term "wen," the original meaning of which is never taken into account, is possibly even better than atheroma, because it is applied to no other pathologic condition.

The diagnosis of atheroma is usually easy, but sometimes the matter is serious.

In 1888 an interesting case came under the observation of Dr. J. H. Stallard, who removed a growth from the scalp of a woman of fifty-six years of age, which before operating he supposed to be a wen, but which upon incision did not shell out readily as wens usually do. He examined a piece of the tissue and found it was an epithelioma, and a second, more thorough operation was performed two days after the first. About one year afterward an ulcerating surface appeared at the site of the operation, for which the patient practically did nothing up to the time when I first saw her, on January 15, 1890. There was then a large raw surface over the left parietal bone, about three inches long by one inch broad, with an attempt here and there at cicatrization. The edges were high, rounded, smooth, bald elevations of a deep-red color, and very hard—an exaggeration of the comparatively low, rolled edges frequently seen in rodent ulcer. It was easy to imagine how closely the original growth must have simulated an atheroma. A piece of the rolled edge was cut out for examination and found to be an epithelioma in which the epithelial cells were remarkably well preserved.

I saw the case but once, being one of several physicians called to determine positively whether it was carcinoma or not, with the understanding that if found to be carcinomatous it was to be let alone. The patient died about twenty months after this with symptoms indicating implication of the brain.

The Eighth International Congress of Ophthalmology is to be held at Edinburgh during the coming August.

Prausnitz has been made Extraordinary Professor of Hygiene in the University of Gratz.

ORIGINAL ADDRESS.

MEMORIAL ADDRESS IN HONOR OF DR. EPHRAIM McDOWELL.[1]

BY L. S. McMURTRY, M.D.,
OF LOUISVILLE, KY.

AT the last annual meeting of this Association a resolution was adopted establishing the custom of having some Fellow prepare for each annual meeting a memorial address commemorating some deceased eminent Southern surgeon or gynecologist, and appointing for this meeting an address upon Ephraim McDowell. In accordance with its provisions I have the honor to appear before you on this occasion.

It would seem almost a work of supererogation to submit an elaborate biographic sketch of McDowell after the very complete accounts of his life and labors by the late Prof. Samuel D. Gross and the late Dr. John D. Jackson. Yet, I presume that no one will for a moment question the good taste and wisdom of perpetuating in our volumes of *Transactions* the names and deeds of those eminent Southern surgeons who did so much to lay the foundation in America and the whole world for the present splendid system of surgery and gynecology. This galaxy of illustrious names would be incomplete without that of McDowell, the "Father of Ovariotomy" and the pioneer in abdominal surgery.

In 1852, twenty-two years after the death of Ephraim McDowell, Professor Gross, in his celebrated report on Kentucky Surgery to the Kentucky State Medical Society, presented a sketch of the life of this eminent surgeon, with a detailed account of his original surgical work. This sketch was subsequently incorporated in Gross' *American Medical Biography*.[2] In this memoir, Professor Gross formally set forth McDowell's claims as the originator, by successful accomplishment of the radical cure of ovarian tumors by abdominal section. In 1879, at the dedication of the monument erected by the Kentucky State Medical Society over the grave of McDowell at Danville, Kentucky, Professor Gross delivered an elaborate memorial oration, in which he reviewed his former sketch and paid fitting tribute to McDowell's memory, silencing forever the criticisms and claims of certain English surgeons who endeavored to claim for others the honor and credit justly due McDowell. This occasion was made imposing by the Kentucky State Medical Society, and, by the monument erected and the memorial volume published, the name and fame of McDowell were established as the valued and cherished heritage of American surgery. I had the honor on that occasion to introduce Professor Gross (if I may use the word in its restricted sense), and shall never forget the eloquence and enthusiasm of the Nestor of American Surgery as he depicted in thrilling words the achievements of the subject of his oration. Upon the platform were seated the Governor, the Secretary of State, and other dignitaries of the State of Kentucky; the President of the American Medical Association (Dr. Lewis A. Sayre); the venerable Dr. Gilman Kimball, of Lowell, Mass. (who had then performed ovariotomy almost three hun-

[1] Read before the Southern Surgical and Gynecological Association, November, 1893.

[2] Published by Lindsay & Blakiston, of Philadelphia, in 1861.

dred times), and many other distinguished American surgeons, with a large convention of the Kentucky State Medical Society, and an audience of cultivated people. Among the letters read on the occasion, paying tribute to McDowell's worth and fame, were those of Sir Spencer Wells and Mr. Thomas Bryant, of England; Fordyce Barker, T. Gaillard Thomas, Oliver Wendell Holmes, T. G. Richardson, Theophilus Parvin, and other distinguished Americans.

In 1872, the late Dr. John D. Jackson, of Danville, Kentucky, published a biographic sketch[1] of Ephraim McDowell. Dr. Jackson was at that time actively engaged in medical practice in the town in which McDowell had lived and labored, and among his friends and colleagues were those who had known the first ovariotomist personally, as well as a number of his relatives by blood. In Dr. Jackson's sketch he states that he was able, by conversation with numerous contemporaries of McDowell, to verify the statements contained in Dr. Gross' memoir, thus giving additional confirmation to the discriminating observation of Dr. Gross as a biographer. Having been reared and educated in Danville, and having for several years practised medicine there, I can also attest the fidelity and care with which Dr. Jackson traced the personal characteristics and professional work of the subject of this sketch.

Ephraim McDowell was born in Rockbridge County, Va., on the 11th day of March, 1771. His ancestors removed from Scotland to the valley of Virginia in 1737. His mother's maiden name was Sarah McClung, the name indicating that she, too, was of Scotch ancestry. McDowell's father was prominent in political life in Virginia, and a member of the Legislature of that State; in 1772 he came as a land commissioner to Kentucky (which was then a portion of Virginia), and soon afterward removed his family to Danville. He was afterward appointed judge of the District Court of Kentucky. Ephraim McDowell received his early education at a classic seminary at Georgetown, Kentucky, and then went to Staunton, Virginia, to enter the office of Dr. Humphreys, of that place, as a medical student. Of Dr. Humphreys little is known, save that he was a graduate of the University of Edinburgh, and a man of ability. In 1793, McDowell went to Scotland to attend lectures at the University of Edinburgh. At the same time Dr. Samuel Brown, a member of the first corps of lecturers at the Transylvania University at Lexington, Kentucky, and Drs. Hosack and Davidge, of New York, were attending the great Scottish University. Young McDowell remained in Edinburgh during the session of 1793–94, but did not receive the degree of M.D. As far as we know, the degree of M.D. was not conferred upon him until 1823, when, entirely unsolicited on his part, the University of Maryland conferred upon him the honorary degree of M.D. The Medical Society of Philadelphia, at the time the most distinguished of its kind in this country, sent him its diploma in 1807, two years before he performed his first ovariotomy. Thus it will be seen that McDowell had attained national distinction as a surgeon before he undertook the work that has made his name famous.

While in attendance at the University of Edinburgh, McDowell attended the private instructions of John Bell, the most able and eloquent of the Scotch surgeons of his day. That portion of Mr. Bell's course in which he lectured upon the disease of the ovaries and depicted the hopeless fate to which their victims were condemned made a powerful impression upon its auditor. Indeed, McDowell afterward stated that the principles and suggestions at this time enunciated by his master impelled him sixteen years afterward to attempt what was considered an impossibility. In 1795 McDowell returned to his home in Danville, then a small village in the Western wilderness, and entered upon the practice of his profession. Being a man of classic education, coming from the most famous medical school of the world, he soon easily assumed the first professional position in his locality, and within a few years he became known throughout all the Western and Southern States as the first surgeon of this entire part of the country. Indeed, until Dr. Benjamin W. Dudley, of Lexington, Ky., came upon the field, McDowell stood without one to dispute his position as the most eminent surgeon west of the Alleghenies. During this time his practice extended in every direction, persons coming to him from all the neighboring States; he frequently made long journeys on horseback to operate upon persons whose condition would not permit them to visit him at his home. So far as is known, he was in the habit of performing every surgical operation then practised. In lithotomy he was especially successful, and, up to 1828, was known to have operated twenty-two times without a single death. He operated many times for strangulated hernia, and did successfully various amputations and other operations, including tracheotomy.

In 1809, fourteen years after he had begun the practice of his profession, he was sent for to see Mrs. Crawford, residing in Greene County, Kentucky, some sixty miles from Danville. McDowell found her to be the subject of an ovarian tumor, which was rapidly growing and hastening to a fatal termination. In the language of Gross: "After a most thorough and critical examination, Dr. McDowell informed his patient, a woman of unusual courage and strength of mind, that the only chance for relief was the excision of the diseased mass. He explained to her, with great clearness and fidelity, the nature and hazard of the operation; he told her that he had never performed it, but that he was ready, if she were willing, to undertake it, and risk his reputation upon the issue, adding that it was an experiment, but an experiment well worthy of trial." At the close of the interview Mrs. Crawford declared that any mode of death, suicide excepted, was preferable to the slow death which she was undergoing and that she would submit to any operation which held out even a remote prospect of relief. Mrs. Crawford was forty-seven at the time of the operation, and died on the 30th of March, 1841, aged seventy-eight years. It was not until seven years afterward, and when he had twice repeated the operation, that McDowell published any account of it. In 1861 he prepared a brief account of his first three cases, a copy of which he forwarded to his old preceptor, John Bell, who was then travelling on the Continent for his health, and had left his professional correspondence in charge of Mr. John Lizars. The communication failed to reach Mr. Bell, and another copy was forwarded by McDowell

[1] In Gaillard's Medical Journal.

to Philadelphia for publication. The report appeared in the *Eclectic Repertory and Analytical Review* for October, 1816. It reads as follows:

"In December, 1809, I was called to see a Mrs. Crawford, who had for several months thought herself pregnant. She was affected with pain similar to labor-pains, for which she could find no relief. So strong was the presumption of her being in the last stage of pregnancy, that two physicians who were consulted in her case requested my aid in delivering her. The abdomen was considerably enlarged, and had the appearance of pregnancy, though the inclination of the tumor was to one side, admitting of an easy removal to the other. Upon examination, *per vaginam*, I found nothing in the uterus which induced the conclusion that it must be an enlarged ovarium. Having never seen so large a substance extracted, nor heard of an attempt or success attending any operation such as this required, I gave to the unhappy woman information of her dangerous situation. She appeared willing to undergo the experiment, which I promised to perform, if she would come to Danville (the town where I lived), a distance of sixty miles from her place of residence. This appeared almost impracticable by any, though the most favorable, conveyance, though she performed the journey in a few days on horseback. With the assistance of my nephew and colleague, James McDowell, M.D., I commenced the operation, which was concluded as follows: Having placed her on a table of the ordinary height, on her back, and removed all her dressing which might in any way impede the operation, I made an incision about three inches long, from the musculus rectus abdominis, on the left side, continuing the same nine inches in length, parallel with the fibers of the above-named muscle, extending into the cavity of the abdomen, the parietes of which were a good deal contused, which we ascribed to the resting of the tumor on the horn of the saddle during the journey. The tumor then appeared full in view, but was so large that we could not take it away entire. We put a strong ligature around the Fallopian tube near to the uterus; we then cut open the tumor, which was the ovarium and the fimbriated part of the Fallopian tube very much enlarged. We took out fifteen pounds of a dirty, gelatinous-looking substance; after which we cut through the Fallopian tube and extracted the sac, which weighed seven pounds and a half. As soon as the external opening was made, the intestines rushed out upon the table, and so completely was the abdomen filled with the tumor that they could not be replaced during the operation, which was terminated in about twenty-five minutes. We then turned her upon her left side, so as to permit the blood to escape, after which we closed the external opening with the interrupted suture, leaving out at the lower end of the incision the ligature which surrounded the Fallopian tube. Between every two stitches we put a strip of adhesive plaster, which, by keeping the parts in contact, hastened the healing of the incision. We then applied the usual dressing, put her to bed, and prescribed a strict observance of the antiphlogistic regimen. In five days I visited her, and much to my astonishment found her engaged in making up her bed. I gave her particular caution for the future, and in twenty-five days she returned home, as she came, in good health, which she continues to enjoy."

Two additional cases completed this report, all three patients making complete and prompt recovery.

Three years later (October, 1819) McDowell reported in the same journal two additional cases. It will be observed that seven years elapsed from the time he first operated until he made his publication, when he was enabled to add two more successful cases. That so long a time should have been allowed to elapse was most probably due to the surgeon's natural aversion to writing. He was fond of the active duties of his profession and possessed a natural antipathy for literary work. Such men we all know nowadays in the profession, and we must remember that the telegraph, medical societies, and weekly medical journals were not at his command. The communication announcing the successful undertaking covered less than three octavo pages of printed matter, and bore the evidence of careless composition, but all the essential points were given succinctly. If such operations had been performed in our day the most minute circumstances would have been described in detail. McDowell lacked that grace of diction and power of description necessary for such work. Dr. Gross says that writing was a great bore to him, and that he was almost a stranger to the pen and never had any fancy for its use. Perhaps the manner in which this report was made did much to provoke the criticism with which it was received. Dr. James Johnson, the very learned editor of the London *Medico-Chirurgical Review*, was especially severe and satirical in his criticisms. In 1827, when McDowell's work was confirmed by other persons and by additional cases, Dr. Johnson said: "There were circumstances in the narrative of some of the first cases that raised misgivings in our minds, for which uncharitableness we ask pardon of God and of Dr. Ephraim McDowell, of Danville."

Just here it will be interesting to note some points in McDowell's operative technique. The operation, of course, was executed without an anesthetic. The incision was made to the left of the median line, about three inches external to the rectus muscle, and was nine inches in length. After opening the peritoneum he first tied the pedicle with a strong ligature, and then cut open the tumor and removed its contents. He then divided the pedicle, it having been previously tied, and removed the sac. As soon as the incision was made into the abdomen, he states, the intestines rushed out upon the table, and were not replaced until the operation was completed, which, he adds, "occupied twenty-five minutes." He then turned the patient upon the left side to allow all fluids to escape. He closed the incision with interrupted sutures and brought out the ligature attached to the pedicle at the lower angle of the incision. In reporting his cases he omits mention of the material composing the ligature, and I have been informed by a personal friend of McDowell's, now dead, who was a great deal about McDowell's office in his boyhood, that the ligatures used were made of shoemaker's thread and waxed thoroughly before being used. Adhesive strips and a bandage completed the dressing, and, in the author's language, he prescribed "a strict observation of the antiphlogistic regimen."

The special features of the technique are: (1) The incision was made through the muscular layer of the abdominal wall three inches external to the rectus muscle; (2) the cyst was not evacuated until after the pedicle was tied; (3) an effort was made to cleanse the peritoneum of fluids; (4) drainage was sought, as well as escape of ligatures, by bringing the ligatures out at the lower angle of the incision; (5) the operation occupied only twenty-five minutes, expedition being more the result, doubtless, of the want of an anesthetic than

otherwise. In his report of his second case he uses this language: "I laid her side open." In his third case, however, he adopted the median incision, saying in his report of this case, "I changed my place of opening to the linea alba." In all of his cases he ligated the pedicle before separating adhesions or tapping the tumor. In his third case he mentions that the ligatures could not be released for five weeks, at the end of which time the cord was taken away.

In his second report, in 1819, in which he relates two additional cases, he incidentally alluded to his critics and their criticisms in these words:

"I thought my statement sufficiently explicit to warrant any surgeon's performing the operation when necessary without hazarding the odium of making an experiment, and I think my description of the mode of operating, and of the anatomy of the parts concerned, clear enough to enable any good anatomist, possessing the judgment requisite for a surgeon, to operate with safety. I hope no operator of any other description may ever attempt it. It is my most ardent wish that this operation may remain to the mechanical surgeon forever incomprehensible."

If we knew nothing else of McDowell's mental cast and surgical ability these lines would stamp him as a surgeon of broad and elevated views, with a high conception of the science and art of surgery, a keen appreciation of its progressive spirit, and that he knew of the advanced ground upon which he trod.

How many times during his career he performed ovariotomy is not now certainly known. Dr. Jackson states that in 1822 he made a long horseback journey of some hundreds of miles into middle Tennessee, and performed ovariotomy with success upon Mrs. Overton, who resided near the Hermitage, the residence of President Jackson. The only assistants he had in the operation, Dr. Jackson states, were General Jackson and a Mrs. Priestly. General Jackson seems to have been greatly pleased with McDowell, and had him go to his house for entertainment. His nephew, Dr. William A. McDowell, who for five years was his pupil and for two years his partner, tells us that up to 1820 his uncle had done seven ovariotomies, six of which he witnessed, and that six of the seven were successful. Dr. Alban G. Smith succeeded Dr. William A. McDowell as partner of Dr. Ephraim McDowell, and while with him Dr. Smith himself twice performed ovariotomy. The younger McDowell stated later that he knew of his uncle having during his career operated thirteen times, exclusive of the two cases Dr. Smith operated upon; of the thirteen, eight recovered.

McDowell first operated in 1809; in July, 1821, Dr. Nathan Smith, Professor of Surgery in Yale College, performed ovariotomy at Norwich, Conn. Dr. Smith had never heard of McDowell's work and operated in an entirely original way. The incision was made in the median line, and was three inches in length. Dr. Smith states that he waited until the blood ceased flowing before he opened the peritoneum. The omentum being adherent, he tied it away with ligatures made from a kid glove. The pedicle was also tied with the same material, the ligature cut short, the pedicle dropped, and the incision closed. The patient made an uninterrupted recovery. Dr. Alban G. Smith, previously mentioned, reported his first operation, of date of May 23, 1823, in the *North American Medical and Surgical Journal* for January, 1826. He states that he administered a decoction of senna to the patient the night after the operation, producing free catharsis the next day and the day following. Peaslee alludes to this to illustrate the crude methods of the early ovariotomist, while we of the present day recognize Dr. Smith as having been in advance of his times. In 1829 Rogers, of New York, operated successfully, adopting the method of treating the pedicle which Nathan Smith had practised. Bellinger, of Charleston, S. C., operated successfully in 1835, tying the pedicle after Nathan Smith's method. McDowell died in 1830, and from 1835 until 1843 there were absolutely no cases of ovariotomy in this country, according to the searching records of Peaslee and others. In 1843 the late Dr. John L. Atlee, of Lancaster, Pa., and Dr. Alexander Dunlap, of Springfield, Ohio, began their work, joined by Dr. Washington L. Atlee, of Philadelphia, the following year, thus reviving the operation in America. Of these great pioneers in abdominal surgery Alexander Dunlap still survives.

There would be comparatively little credit due McDowell had he without just conception of the nature and character of the undertaking, its difficulties and its dangers, cut into an ovarian tumor, thinking it, perhaps, an abscess or serous accumulation; but educated as he was in the most famous and advanced medical school in the world, experienced in all branches of operative surgery, he had a thorough conception of the nature of the tumor, and deliberately conceived and successfully executed a complete operative procedure previously unattempted in the civilized world. In Great Britain Dr. Robert Houston had, in 1701, laid open an ovarian tumor and evacuated its contents, but he made no attempt to remove the sac. A similar operation had been done by L'Aumonier, but the failure of these eminent surgeons would tend to deter one from rather than to encourage the undertaking. When we think of one living on the border of Western civilization, in a little town of five hundred inhabitants; far removed from the opportunity of consultation with anyone whose opinion might be of value, and nearly a thousand miles from the nearest hospital or dissecting-room; performing a new and untried operation of such magnitude upon the living; before the days of anesthesia; with a full sense of the responsibility and danger; without skilled assistants—our admiration for McDowell's courage and skill rises to its full height, and we feel that he was indeed a man of original ability, clear head, skilled hand, and stout heart.

Dr. Jackson, who conversed with many reliable persons personally acquainted with McDowell, gives this description of his personality: "Dr. McDowell, in person, was nearly six feet in height, of commanding carriage, of a rather florid complexion, with black eyes and dark hair, and deemed in youth quite handsome. He was always remarkable for his strength and agility, and while at Edinburgh was pronounced the swiftest footracer of the whole University. He was one of the kindest-hearted and most amiable of men, overflowing with cheerfulness and good humor, and readily approachable. He seemed to be totally devoid of all reserve and austerity, a tinge of which is generally characteristic of the scholar and professional man, and never appeared

to assume that there was any difference between the plane of his vocation and that of the humblest unlettered artisan.

"He possessed an excellent medical library for his day and locality, and was in the habit of purchasing most of the principal new works on medicine. While having a fair knowledge of the classics, yet most of his professional leisure he gave to history and belles-lettres. Burns was an especial favorite with him, and from his familiarity with the Scottish dialect, acquired while in Edinburgh, his readings and quotations were given with the idiom as perfect as if he had been a native of Auld Reekie.

"As a citizen he was charitable and public-spirited, favoring and contributing, by his means, to most of the enterprises which promised good to the community in which he resided. He was an especial friend to the Center College of Kentucky, coöperating largely by his influence and money toward its foundation, and was, indeed, one of its original corporators and curators. This, too, although its government was by the Presbyterian Church, while he himself was in religion an Episcopalian. The site of the present Episcopalian edifice in Danville, Trinity Church, was a contribution from Dr. McDowell."

All who knew him were impressed with the elegance of his personal appearance, especially with the neatness of his dress and his personal cleanliness.

At the age of thirty-one Dr. McDowell married Sarah, the daughter of Kentucky's famous "war governor," Isaac Shelby, with whom he lived happily and raised a family of six children, two sons and four daughters, only three of whom survive him. Mrs. McDowell was his survivor by ten years. In the later years of his life he removed from the village to a country home, where he spent the later years of his life, still continuing his professional work. He died on the 20th day of June, 1830, after a brief illness.

In affairs relating to human progress and discoveries history repeats itself. The discovery of the circulation of the blood, one of the most brilliant achievements of the seventeenth century, it is said was not accepted by a single one of Harvey's contemporaries over forty years of age. Many years elapsed before the efficacy of vaccination was fully accepted after Jenner's demonstration of its protective power. All great discoveries in science have been destined to be received with doubt, prejudice, and opposition. It was not allowed to McDowell to see the fruits of his immortal work beyond the limits of his own country. As I have stated, Prof. Nathan Smith, the second ovariotomist, had never heard of McDowell's successful work when he undertook the solution of the same problem. When McDowell died, his operation could scarcely be said to have gained a foothold, and after his death it was abandoned until the Atlees and Dunlap revived the operation. In England, Charles Clay did his first operation in 1842. Mr. Spencer Wells began to operate in 1858. The growth and development of the operation up to the present time, when it has become the most successful major operation known to surgery, are familiar to all. That the work of McDowell, published to the world in 1816, opened the way and established the feasibility and practicability of the operation no one pretends to deny. One remarkable circumstance connected with the operation is that it originated and was most practised in the country, while the eminent teachers of surgery in the great cities as a rule refused to accept it and positively opposed it long after it was established in practice. At so late a period as when Dr. Washington L. Atlee lived and practised in Philadelphia, he was refused professional recognition by many eminent surgeons of that city, and was often denounced as a murderer. Another circumstance connected with the birth and growth of ovariotomy, which cannot but impress the student of its history, is that this branch of surgery has been advanced by the labors of a few men. The fate of this operation was for a long time centered in the personality of a few courageous individuals. The high position it has attained is due to the fact that its recorded results are made by a comparatively few operators.

It is beyond the scope of this address to discuss the brilliant achievements of modern surgery in extending the field of abdominal and pelvic surgery. Every important organ within the abdomen has been brought within the surgeon's province until this department of surgery has become the crowning glory of our art. The foundation and history began with ovariotomy; ovariotomy began with McDowell. Careful reflection upon the operative methods of the "Father of Ovariotomy," as I have endeavored to portray them by quoting from his own description, will demonstrate that, except as to asepsis, but little improvement has been made over his methods as originally conceived and carried out. The introduction of the clamp, as practised so long by Sir Spencer Wells, we now know to have been a backward step, which for many years delayed the progress of ovariotomy and prevented an extension of the field of abdominal surgery. With a return to the dropped pedicle as ligated by McDowell, with the simple modification of ligatures cut short, the operation at once under antiseptic precautions reached its present position.

CLINICAL MEMORANDUM.

THE ADMINISTRATION OF A GLYCERIN SOLUTION OF MERCURIC CHLORID AS A PROPHYLACTIC MEASURE AGAINST DIPHTHERIA.

BY WILLIAM C. DABNEY, M.D.,
PROFESSOR OF MEDICINE, UNIVERSITY OF VIRGINIA.

IT seems to be a generally accepted opinion now that the Krebs-Löffler bacilli attack the pharynx, as a rule, first, and that the constitutional symptoms of diphtheria result from the absorption of toxins generated by these germs. If this view be correct, it is evident that the destruction of the pathogenic germs in the pharynx before they have time to generate toxic substances will materially assist in preventing an attack in the case of children who are exposed to the disease. Various methods of applying germicidal agents to the pharynx have been proposed, but the one which I am in the habit of using does not seem to have been employed as yet, so far as I can learn, and it is, I think, well worthy of a trial, because of its simplicity and the facility with which it can be employed.

It consists in administering to the persons who have

been exposed a solution of mercuric chlorid in glycerin. The corrosive sublimate is, of course, the germicidal agent; the glycerin is used as a vehicle because it sticks to the throat, and thus keeps the germicide in contact with the mucous membrane.

I usually give from $\frac{1}{68}$ to $\frac{1}{60}$ of a grain of the bichlorid in a teaspoonful of glycerin every three hours. I direct that the child shall not be allowed to swallow anything else for at least half an hour afterward.

No water is added to the glycerin solution of mercury.

For some time I was in the habit of adding muriated tincture of iron to the mercury and glycerin, but when this is done it necessitates the dilution of the mixture with water, and the *local* action of the drugs is, of course, diminished, so that when used as a *prophylactic* measure I have recently omitted the iron.

In cases of developed diphtheria I have for years used a spray of hydrogen dioxid—one part to four of water—and followed this by the administration of a solution of mercuric chlorid and muriated tincture of iron in glycerin. Perhaps it would be better to give the bichlorid and iron separately, because the former could be given in glycerin without the addition of water, and would thus be kept longer in contact with the pharyngeal mucous membrane.

TERATOLOGIC NOTE.

TWO RECENT ADDITIONS TO THE TERATOLOGIC COLLECTION IN THE WISTAR AND HORNER MUSEUM OF THE UNIVERSITY OF PENNSYLVANIA: SPECIMENS OF ACEPHALUS AND OF MICROMELUS.

BY BARTON COOKE HIRST, M.D.,
PROFESSOR OF OBSTETRICS, UNIVERSITY OF PENNSYLVANIA.

THERE is in the Wistar and Horner Medical Museum of the University of Pennsylvania the best teratologic collection in America. It has grown rapidly of late by gifts from different parts of the United States and from points as distant as the West Indies. If members of the profession continue to contribute as generously as they have, we shall soon have one of the finest collections in the world. A single specimen in the possession of an individual is of little value; but added to a large collection it is itself increased in value, while it enhances the value of the whole collection.

Acephalus. This specimen, kindly presented to me by Dr. Ingalls, of Hartford, Conn., is an example of the commonest form of acardiac acephali. The lower trunk and limbs are comparatively well developed. The thorax, upper extremities, neck, and head are apparently wanting, but rudiments of all these parts may usually be found by a careful dissection. It is very exceptional to find, as in this case, a well-developed hand attached to the upper portion of the trunk without any other part, to all external appearances, of an upper extremity. It is much more common to find an arm represented by an ill-developed stump.

In all the museums of London combined there are but ten *acardiaci*. In our collection there are five.

Rachitis congenita micromelica. In Fig. No. 2 is seen

FIG. 1.

Acephalus.

a typical representation of this rare deformity and congenital disease, rare at least in this country. There is

FIG. 2.

Rachitis congenita micromelica.

hydrocephalus; the limbs are short, curved, and thick, but nowhere fractured. The pelvis has the typical rachitic form—prominent promontory, curved sacrum, widely separated iliac spines, and ischial tuberosities, the result here, of course, of a pull upon the pelvic bones by the muscles attached to them. Nothing is known about the etiology of fetal rachitis. No cause at all could be assigned for it in this case. The student interested in the subject is referred to the excellent article by Winkler in the *Archiv für Gynäkologie*, 1871, and to the bibliography in Müller's *Handbuch der Geburtshülfe*, Bd. ii, p. 807.

1821 SPRUCE STREET.

MEDICAL PROGRESS.

The Results and the Treatment of Wounds of the Common Femoral Vein at Poupart's Ligament.—NIEBERGALL (*Deutsche Zeitschrift f. Chirurgie*, B. xxxvii, H. 3, 4, p. 268) has arrived at some interesting conclusions as the result of a careful study of the results and the treatment of injuries of the common femoral vein at Poupart's ligament. He assents to the view that, as a rule, by reason of the presence of valves in the veins, there is no venous circulation in the lower extremity except through the common femoral vein; but he does not consider as justified the inference that sudden occlusion of the femoral vein at Poupart's ligament must, by reason of the resulting stasis, lead to gangrene of the lower extremity, and that in case of injury of the vein in this situation relief is to be afforded by immediate ligation of the artery. It has been shown that after ligation of the femoral vein, but moderate arterial pressure suffices to overcome the action of the valves in the venous anastomoses, and thus establish a collateral circulation. As the pressure necessary to establish the collateral circulation during life depends upon the energy of the current in the artery, the lumen of this vessel is to be left free. The evidences of stasis (cyanosis, edema) that appear after ligation of the femoral vein, without interference with the artery, result from the elevation of the pressure in the venous system to that present in the arterial system, and represent Nature's method and means of adjustment. These threatening manifestations disappear with a readiness corresponding to that with which the collateral circulation is established. In some cases they have persisted for but a few hours. Among twenty-five cases in which ligation of the femoral vein was practised by reason of the accidental or involuntary injury or unavoidable division in connection with the extirpation of neoplasms, gangrene did not follow in any. The circulatory disturbances that follow ligation of the femoral vein for sudden traumatisms differ only in degree from the disturbances that take place after ligation of the vein for injuries in the course of neoplasm-extirpation. Among ten such cases death followed in but one, and in this the fatal result may have been due to other conditions. The simultaneous ligation of the femoral artery and vein for injury of the vein alone, or of both artery and vein in the course of neoplasm-extirpation, or for trauma of the vein alone, or both artery and vein, is attended with an unfavorable (under the conditions first stated gangrene occurred in 62.5 per cent. of the cases, under the conditions second named in 50 per cent.), though not necessarily fatal prognosis. There is, therefore, no indication for primary amputation. The results of the application of the ligature are first to be awaited, and secondary amputation undertaken only when gangrene sets in. The explanation of these unfavorable results is to be found in the ligation of the artery, in consequence of which the force necessary to equalize the pressure in artery and vein is eliminated. An adjuvant to the development of gangrene of the extremity, after ligation of the artery, is to be found in the resulting local anemia, particularly in the peripheral parts, which in turn may lead to anemic necrosis (particularly after antecedent hemorrhage, cardiac weakness, or arterio-sclerosis). An additional cause for gangrene resides in the hemorrhagic infiltration of the tissues and the sheaths of the vessels. As a result of the increased pressure, the entrance of blood into the collateral circulation is obstructed and the venous return is made more difficult; at the same time the living wall takes up fibrin-ferment from the extravasation, thus favoring coagulation of the blood within the vessels. This influence is particularly noticeable in the thin-walled veins, with their slow blood-current, in which extensive thrombosis forms as soon as the opportunity for resorption of the fibrin-ferment arises. The grounds upon which the recommendation for ligation of the femoral artery and vein for injury of the vein was based (control of hemorrhage, regulation of the circulatory conditions) are insufficient, inasmuch as ligation of the artery often fails to control hemorrhage from the vein; besides, the occasion for a regulation of the circulatory conditions disappears when, as usually happens, the vein is simultaneously ligated. In addition, the resistance of the valves in the collateral venous branches is too great to be overcome by the feeble arterial current. While it is possible thus, by permitting the lumen of the femoral artery to remain free, and avoiding infiltration of blood and its consequences, to ligate the femoral vein without danger of gangrene of the extremity, even after antecedent trauma, there remains a group of cases (antecedent hemorrhage, disease of the walls of the artery), providing the condition of the walls of the vein is beyond suspicion, in which partial lateral ligation of the vein would seem preferable; also in case of small wounds of the vein, thus permitting the current of blood through the vessel to be maintained. Under such circumstances compression, antiseptic tamponade, would be applicable under peculiarly favorable conditions, such as a small wound of the vein and soft parts in case of accidental trauma. The possibility of the occurrence of secondary hemorrhage as a result of slipping of the ligature must be borne in mind after lateral ligation. The most secure and most serviceable means of ligature are lateral suture of the vein and the application of forceps for a period of twenty-four hours. The question of total or partial ligature will be decided by the nature of the wound in the vessel, and the character of the injury. Malignant neoplasms, involving the walls of the vein so as to prevent its isolation, indicate resection of the vessel with circular ligature; the same procedure will be required if the injury of the vein involves the greater part of the circumference of the vessel, or if the posterior wall of the vein is also involved. At least two ligatures will be required.

one peripheral, the other central; a third ligature will be required when the mouth of the vena profunda lies between the other two ligatures. The ligatures are to be applied as closely above and below the seat of injury as possible without incurring any risk of their slipping. If the wound in the vein is small, if it elongate longitudinally, and if it involve an otherwise healthy vessel, lateral ligation is indicated. Tamponade may be tried, but is to be discarded if it does not succeed upon the first trial. In case of slight injuries in the course of neoplasm-extirpation, when the conditions are exposed to view, dependence will not be placed upon tamponade. In case of antecedent trauma (puncture), enlargement of the external wound will usually be necessary to determine the nature of the injury. The ligation of the femoral artery for the control of hemorrhage from the femoral vein or from lateral branches of the femoral vein must be considered a mistake under all conditions, and not permissible. If both artery and vein are injured, or if both must be resected in the removal of new-growths, gangrene is to be expected. The operation is to be followed by scrupulous removal of all extravasated blood, and by vertical suspension or elevation of the lower extremity. All recommendations calculated, in view of the supposed dangers of venous stasis, to lower the arterial pressure (immediate compression of the artery after ligation of the vein, ligation of the superficial femoral artery) are to be rejected as contra-indicated and injurious.

Tuberculosis of the Penis.—MALÉCOT (*Annales des Malad. des Organes Génito-urinaires*, 1893, No. 11, p. 838) has reported an instance of tuberculosis of the penis—a rare localization. The case occurred in a boy, fourteen years old, on whom the rite of circumcision had been practised a week after birth, and who for three years had complained of irritability of the bladder. Micturition was frequent and painful, and the urine was often mixed with blood. For about eighteen months there had been both diurnal and nocturnal incontinence of urine. The lad appeared pallid and emaciated, but no pulmonary lesion was detectable. The ulceration involved the extremity of the glans penis, and occupied an area about the size of a silver quarter-dollar, having the meatus urinarius as its center. The borders of the ulcer were a little irregular, but not undermined, and were discolored, presenting here and there slight prominences. The base was pale, smooth, and presented a few vessels about the meatus, which appeared somewhat retracted. Although the ulcer was constantly soiled by urine it presented no drop of pus. It was soft and free from pain, even on pressure, and there was no involvement of the inguinal glands. Direct examination of scrapings from the surface of the ulcer failed to disclose the presence of tubercle-bacilli, but inoculation-experiments demonstrated the correctness of the clinical diagnosis of tuberculous ulceration.

Akromegaly in Father and Son.—BONARDI (*Arch. Ital. di Clin. Med., 1893; Rev. des Sci. Méd.*, No. 85) has recorded the case of a man, seventy-four years old, whose father had been affected with akromegaly, and who for a long time presented increased size of the head, elongation of the face, enlargement of the tongue, hypertrophy of the hands and feet, and dorsal kyphosis. After death a tumor of the pituitary body was found, in conjunction with generalized endartertis and sclerotic atrophy of the thyroid gland.

THERAPEUTIC NOTES.

Potassium Permanganate as an Antidote to Opium and its Alkaloids.—It is related that a physician of New York recently demonstrated, in the presence of a number of colleagues, in his own person the efficacy of potassium permanganate as an antidote to morphin. He is said to have swallowed three grains of morphin sulfate in solution, and immediately afterward four grains of potassium permanganate dissolved in four ounces of water, without the development of the usual effects of morphin. It is maintained that morphin, or any of the salts of opium, is immediately rendered inert by contact with potassium permanganate, the one drug seeming to have a special affinity for the other, the one being a reducing agent, the other an oxidizing agent. As the antidotal action is chemic rather than physiologic, it is essential that the permanganate be administered soon after the ingestion of the opiate. It was first believed that the permanganate is without influence after the opiate has been absorbed, but experiments upon animals seem to indicate that if the former is introduced into the veins at not too great an interval after the ingestion or injection of the latter an antidotal influence is also exercised.

Internal Remedies for Vesicular Eczema.—PHILLIPS (*British Medical Journal*, No. 1726, p. 175) details the results of a study of the effects obtained from the internal administration of various remedies in the treatment of vesicular eczema. Calcium sulfid was used in a large number of cases, but with disappointing results. Ichthyol, in pill-form, seemed to have a slight modifying influence in some cases; in one case of relapsing vesicular eczema of the arms and hands the patient believed that the drug was of more benefit than any previously used remedy. Calcium chlorid was used in a large number of cases, but with entirely negative results. Antimonium and potassium tartrate, in doses of from one-tenth to one-sixth of a grain thrice daily, continued for long periods, seemed to be helpful in a small proportion of cases. The results from thyroid feeding were negative. The hypophosfites appeared to be occasionally useful.

Thyroid Extract in the Treatment of Syphilitic Psoriasis.—GORDON (*British Medical Journal*, No. 1726, p. 186), has reported the case of a woman, forty-nine years old, who presented palmar and plantar psoriasis, together with other manifestations of syphilis, in the course of which potassic iodid, and arsenic and chrysophanic acid had been employed, with but little improvement. It was resolved to give thyroid extract a trial. All treatment was withheld for a week. At the end of this time 20 minims of a glycerin extract of thyroid gland were prescribed daily. Marked improvement shortly set in, which proved persistent. Subsequently, treatment with iodid was resumed.

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ENGLISH AND GERMAN VIEWS OF GOUT.

ANYONE who has read the careful collective review of the newer literature on gout by PROF. C. VON NOORDEN, which recently appeared in the *Berliner klinische Wochenschrift*,[1] will have been struck by the comparison of the work done in England with that coming from Germany. The English, with an abundance of clinical material, have given us by far the best account of the symptomatology and general course of the disease, while the Germans, with their tendency for research and their excellent laboratory equipment, have contributed to the chemic rather than to the clinical side of the process—a side which has in England, if we except the work of one or two men, remained in the condition in which it was left fifty years ago.

SIR DYCE DUCKWORTH in a comprehensive work[2] has included, along with his own observations, the views of his fellow-countrymen upon the variations in the clinical picture which the disease may present, and has outlined the treatment clearly and with calm judgment. In his comments on the pathogenesis and theory as to the essential nature of the disease, however, we find little else than hypotheses built upon the chemistry of GARROD. He has referred, it is true, to the work of HAIG, the main points of which have been embodied in a book written by the latter entitled *Uric Acid*.[1] According to HAIG there is no increased formation of uric acid in gout, but the blood being less alkaline than normal is unable to hold uric acid (or its salts) in solution. The kidneys cannot remove these constituents sufficiently rapidly when the alkalinity of the blood is lowered, and they are consequently deposited in the tissues and joints, where the lymph-stream is slow and of low alkalinity. It will be noted that HAIG'S theory agrees with GARROD'S in so far as it regards gout as dependent essentially upon an excess of uric acid and its salts within the body; the distinction between the two is simply that GARROD attributed the accumulation to renal insufficiency, while HAIG lays the fault to an alteration in the composition of the blood. The idea so often met with in English literature, that acute articular rheumatism and gout are only different manifestations of one and the same disease, is no less astonishing to the German than it is to the American mind.

SIR WILLIAM ROBERTS[2] has broken loose from the traditional views, and has set up a new theory based upon personal physiologic and chemic investigations. His ideas have been clearly expressed in the Croonian lectures for 1892, and are already so well known that we shall not enter fully into them here. It will be sufficient to recall the main points: In the healthy body uric acid and neutral and acid urates play no important part in metabolism. It is an easily soluble "quadriurate" that is formed in the tissues, that circulates in the blood, and is excreted by the kidneys. If there be over-production or deficient elimination from any cause, this quadriurate is transformed, through the influence of the alkali of the blood, into the difficultly soluble "biurate." This latter, existing at first in a gelatinous form, is easily changed into a less soluble anhydrid, to be finally deposited in crystalline form in certain parts of the body, where the temperature is low (*e. g.*, in the peripheral joints), and particularly where the lymph contains a relatively high

[1] C. v. Noorden: "Neue Arbeiten über Gicht," Berl. klin. Wochenschr., 1893, p. 1221.

[2] Sir Dyce Duckworth: A Treatise on Gout, London, 1892.

[1] A. Haig: Uric Acid as a Factor in the Causation of Disease, London, 1892.

[2] Sir W. Roberts: "The Chemistry and Therapeutics of Uric Acid, Gravel, and Gout," Brit. Med. Journ., 1892, i, 1235, 1347: ii, 6, 61.

percentage of sodium chlorid (*e. g.*, synovial fluid). These salts when once deposited can only with great difficulty be redissolved.

An attempt has been made in a recent valuable monograph by LEVISON[1] to explain all the known facts of gout by means of the "quadriurate" theory, HARBACZEWSKI'S doctrine, that the uric acid originates from nuclein, completely independently of the formation of urea in the body, being accepted at the same time in its entirety. LEVISON comes back, however, in concluding, to the older idea of GARROD, that gout depends on a retention of uric acid as a result of renal insufficieny, and points out that heredity, immoderate alcoholic indulgence and excesses in nitrogenous food are factors common alike in the etiology of both gout and contracted kidney.

Among the German contributions none has attracted more attention, perhaps, than that of E. PFEIFFER.[2] It may be remembered that PFEIFFER determined that in his patients who suffered from acute attacks of gout, but showed no chronic alterations (*e.g.*, tophi), there was, as a rule, less uric acid excreted than in health, while in patients with chronic changes the amount of uric acid in the urine was normal or a little increased. If the uratic deposits in the tissues in the latter case be considered, the total formation of uric acid is found to be abnormally great. In both classes of cases the amount of urea excreted daily is below the normal, and PFEIFFER lays stress on his view that in the gouty patient, even before any permanent alteration has taken place in the tissues, a perversion of the total metabolism can be demonstrated. More numerous and more extensive investigations of the total metabolism, as VON NOORDEN points out, must be made before such conclusions can be regarded as safe.

It has further been shown by PFEIFFER, that by passing 100 c.cm. of the day's urine through a filter charged with from 0.2 to 0.5 gr. of pure uric acid, there is less uric acid (precipitable by hydrochloric acid) in the filtrate than in the unfiltered urine. The difference is represented by what he calls "easily separable" or "free" uric acid (*leicht ausscheidbare oder freie Harnsäure*). Applying this test to gouty urine he found (1) that during and just after an acute attack there is none or almost none of this "easily separable" uric acid present, and (2) that in the intervals between the attacks and in chronic gout, nearly all of the uric acid of the urine (precipitable by HCl) is of this "easily separable" variety. It is to be noted that healthy urine loses by filtration through 0.2 gr. of uric acid rarely more than 35 per cent. of the amount which can be precipitated by hydrochloric acid.

No sooner a new fact than a new theory, and PFEIFFER assumes that the blood, like the urine, in gout, holds its uric acid in "more easily separable" combinations than in health, and thus the deposits in the tissues are easily to be accounted for. The acute attacks result from the local irritating effects of a sudden solution of the tissue-deposits, consequent on an increase in the alkalinity of the blood or lymph; "firmer" (*gebundenen*) combinations of uric acid then circulate in the blood and are given off in the urine.

These observations have been confirmed by CAMERER, SCHETELIG, and MORDHORST; and LEUBE has gone so far as to state in his text-book that they are of great importance for diagnostic purposes, even though the cause of this peculiar behavior of the uric acid in gouty urine is as yet not clear. Were these phemonena constant for gout, and did they never occur in other diseases, a diagnostic gain would certainly have to be admitted, for it is exactly in the intervals between the attacks that the diagnosis is most difficult, and here, according to PFEIFFER, the urine is most abnormal. But FELIZIANI, as well as ROBERTS, contradicts these statements of PFEIFFER, and more, even should his findings in gouty urine prove to be correct, the signs are by no means pathognomonic, for VON NOORDEN has demonstrated a wholly analogous behavior of the uric acid in certain febrile disturbances and in various affections of the lungs, heart, and stomach. Both the theoretic and practical interest of the observations will of course be materially diminished if VON NOORDEN'S results are confirmed.

EBSTEIN'S[1] theory of a local accumulation of uric acid, which leads first to inflammation and necrosis of tissue, and later to deposition of urates in the diseased part, has been modified by VON NOORDEN.[2] The latter does not believe that the primary changes in the tissues result from the action of uric acid, but prefers to assume that the formation and de-

[1] F. Levison: Die Harnsäure-Diathese, Berlin, 1893.

[2] E. Pfeiffer: "Ueber Harnsäure und Gicht," Berl. klin. Woch., 1892, S. 383, 412, 461, 490, 536.

[1] Ebstein: Beiträge zur Lehre von der harnsäuren Diathese, Wiesbaden, 1891.

[2] C. von Noorden: Lehrbuch der Pathologie des Stoffwechsels, Berlin, 1893.

position of the uric acid are the results of a secondary process set up by the presence of a special ferment acting locally, entirely independent of the amount and behavior of the uric acid formed elsewhere in the body.

Nearly all of the recent articles on gout have had something to say regarding the treatment. As to the most suitable dietary there is marked disagreement; ROBERTS, HAIG, and DUCKWORTH urge the advantages of a vegetable diet, while PFEIFFER and VON MERING agree with CANTANI in allowing a liberal supply of meat and limiting the carbohydrates. It has seemed to us that, in the existence of such contradictory opinions, it may be that the quantity of the food ingested, rather than the quality, is of importance for the well-being of the patient. BADT and LEVISON, in curious consonance with the old saying, *Quod ali cibus est aliis fuat acre venenum*, suggest that the diet be ordered, not from the diagnosis of gout, but according to the "individuality of the patient." Still it has been admitted by all authors from very early in its history that gout is most common in countries where "meat-eating" habits prevail.

The therapeutic value of the alkaline treatment has been, it would appear, much overestimated, at any rate as far as the good derived from the alkalies in themselves is concerned. ROBERTS, especially, insists that the benefits of the method are due entirely to the large amounts of water taken. The alkalies are nevertheless much in vogue, and will probably continue to be used, for people are often ready to "take medicine" when they cannot be induced to "drink water," and, besides, the swallowing of large quantities of plain water (to which neither acid nor alkali has been added) is by no means easy, as anyone may readily convince himself who will make the attempt on several successive days.

MORDHORST[1] has strongly recommended the use of the "Wiesbadener Gichtwasser," which contains tolerably large amounts of bicarbonate of soda. When drunk for some time, it renders the urine of both the day and the night slightly alkaline. Occasion is taken by VON NOORDEN in this connection to correct a statement of wide currency, viz., "that since uric acid and urates separate out only in an acid medium, it is necessary that the body-juices in the neighborhood of gouty deposits should be acid." While it is certainly true that the crystals in the deposits are generally those of acid urates, it is not true that the surrounding fluids are necessarily acid, and indeed in three cases in which fresh, soft tophi were opened and the reaction of the contents tested they were found to be alkaline, although acid urate crystals were present in large numbers.

That these acid salts should be stable in an alkaline medium seems at first paradoxic, but the following experiment sheds some light on the subject. A uric acid concretion, sterilized and dried *in vacuo* over sulphuric acid, was suspended in sterile blood-serum for twenty-four hours. Only after the addition of relatively large amounts of alkali could any appreciable loss in weight in the mass be detected. On the other hand, an aqueous solution of alkali of the same strength, under similar conditions, soon dissolved an essential part of the concretion. We learn from this that the alkali in the blood behaves very differently from alkali in water—in the former the affinity for acids is as it were held in bond. We already know something of a similar behavior of acids in albuminous fluids, and ignorance concerning the "bound" and "free" hydrochloric acid of the gastric juice has been largely responsible for the extensive polemic literature on the relative value of the various tests for hydrochloric acid.

Equally interesting is an experiment of MENDELSOHN'S[1] through which it was shown that a mixture of a strongly alkaline water (Vals), with an equal volume of distilled water, dissolved twice as much of a given weight of uric acid as did equal parts of the same alkaline water and urine, the urine (like the blood-serum in VON NOORDEN'S experiment) depriving the other constituents of the power of dissolving uric acid. The relation of experiments such as these to the question of the therapeutic value of the alkalies becomes at once apparent.

It would be interesting, had we the space, to refer to the various researches undertaken to determine the action of *piperazin* in the body, and its value as a remedy for gout. As everyone knows, this substance has a strongly alkaline reaction, and an extraordinary power in solution of dissolving uric acid. These chemic properties gave rise to hopes which have not been realized, as far as any marked increase in the elimination of uric acid after its

[1] Mordhorst: "Zur Lehre von der Gicht," Wien. med. Woch., 1893, No. 10–16. Also, Verh. des X. Congr. f. in. Med., 1891, S. 443, and Therap. Monatsh., 1893, No. 8.

[1] Mendelsohn: "Zur Therapie der harnsäuren Diathese," Verh. des XII. Congr. f. in. Med., 1893, S. 367.

administration is concerned, and confidence in its powers as a uric-acid solvent has been much shaken since MENDELSOHN has shown that it (like the ordinary alkalies) when added to normal urine does not increase the power of that fluid to dissolve uric acid.

To discuss this side of the subject fully would carry us too far, but we cannot close this article without first referring, if only briefly, to the highly interesting investigations made by MEISELS,[1] and independently by BIESENTHAL,[2] concerning the action of piperazin upon the uric acid in living birds. These workers produced the well-known experimental nephritis in hens and pigeons which results from subcutaneous injection of potassium chromate and leads to a retention in the blood of the urinary constitutents. It will be recalled that the end-product of proteid metabolism in birds is not urea but uric acid. Ordinarily in such cases of artificially induced uremia, crystalline urates are deposited in different parts of the body, but when the birds were treated with piperazin the deposits could in the majority of cases be prevented. In the few cases in which deposits occurred in spite of treatment it is fair to presume that the retained uric acid and the absorbed piperazin did not exist together in the blood in the most suitable proportions. The administration of alkalies had no power to prevent the deposits. The piperazin, like urocedin (which has been shown by MENDELSOHN to prevent the separation of urates in the urine from solution), could not dissolve the deposits when once they had been laid down.

While we welcome as extremely suggestive the results of these experiments of MEISELS and BIESENTHAL, yet we agree with VON NOORDEN in advising great caution as regards their application to gout in human beings. As he says, the birds are not *gouty*, but simply *uremic*, and, moreover, it is very probable that the relations of the blood and lymph to uric acid in birds are quite different from those in mammals. One difference between the uric-acid retention of gout and that produced artificially in birds has already been demonstrated: in the latter the precipitation occurs on the free surface of endothelial structures, apparently on account of the concentration of the lymph, while in the former the uric acid is to be found within the bodies of the cells and in the intercellular substance, a deposition of urates occurring on the free surface of a lymph-sac (joint-cavity) only after erosion of the cartilages.

The treatment of gout by piperazin must for the present, then, be looked upon as purely empiric; the belief that we have a rational therapeutic basis in the limited knowledge thus far gained from animal experiments would only lead us in false directions and prevent further progress. The drug appears to be favorably viewed by many, and recently WITTZACK,[1] especially, has warmly supported the earlier recommendations of BIESENTHAL as to its value.

From what has been said it is clear that the problems of gout require for their solution long and patient chemic research and a much more intimate knowledge than we have at present of the complex phenomena of animal chemistry. When what occurs normally is so imperfectly understood, it is but little wonder that the still more subtle changes which occur under pathologic conditions, deep down in the body-metabolism, should prove so elusive when we attempt to grasp them. But the corps of trained and earnest workers in this field is rapidly swelling its numbers, and it is not too much to hope that when the new science of "Physical Chemistry," in which such enormous advances have been made during the past eight or nine years (through the efforts of VAN'T HOFF, ARRHENIUS, OSTWALD and others), shall have been applied to the problems of physiology and pathology, many of the things now secret will be revealed.

[1] Meisels: "Experimente mit dem Piperazin und anderen uratlösenden Mitteln," Ung. Arch. f. klin. Med., i, 1893.

[2] Biesenthal: "Wirkung des Piperazins bei künstlich erzeugten Harnsäure-ablagerungen im thierischen Organismus," Berliner klin. Wochenschr., 1893, No. 33.

[1] Wittzack: "Harnsäure-Diathese und Piperazin," Münch. med. Wochenschr., 1893, No. 28.

EDITORIAL COMMENTS.

Transient Aphasia in the Course of Pneumonia.—It is not uncommon to encounter palsy, and at times other evidences of interference with cerebral function, of varying degree of transiency, in persons who exhibit manifest or probable arterio-sclerotic changes. The explanation ordinarily given is that of ischemia and interference with the nutrition of the brain, resulting from narrowing of the lumen of the cerebral vessels, in consequence of the thickening of their walls as a result of the degenerative process. Similar phenomena are also not infrequently observed in cases of acute or chronic nephritis, and here the explanation is a somewhat different one. It may be conceived, on the one hand, that a dropsical effusion has taken place and

exerts compression of the brain; or, on the other hand, that there are present in the blood noxious products that the kidneys have failed to remove. Manifestations of a like character are from time to time further observed in the course of the infectious diseases. In some of these cases structural changes are induced, but there are others from which, on account of the transiency of the symptoms and the absence of sequelæ, the occurrence of a gross lesion can be excluded. In a communication presented at a recent meeting of the Société Médicale des Hôpitaux, CHANTEMESSE (*La Semaine Médicale*, 1893, No. 73, p. 582) called attention to the occurrence of transitory aphasia in the course of pneumonia, and cited an illustrative case. It was pointed out that when this complication occurs it usually appears toward the close of the second or third day of the attack, being ordinarily preceded by headache and vertigo, and sometimes by numbness and tingling in the right side of the face and in the right upper extremity. The aphasia may set in abruptly, without loss of consciousness; at other times it may become manifest after a typical apoplectiform seizure. The characters of the impairment of speech do not differ from those dependent upon an organic lesion of the third frontal convolution upon the left side of the brain. The paralysis may involve the entire right side of the body, but usually only the inferior portion of the right side of the face, the right half of the tongue, and the right superior extremity are affected, while, as a rule, sensibility and the reflexes are not altered. In pronounced cases the paralyzed parts may be the seat of increased redness, and edema more or less circumscribed and increased by heat. These phenomena persist commonly for from a few hours to a few days, and seem in no way to influence the primary disease. Their fugaciousness excludes the possibility of organic disease, and their character and association are unlike those of hysteria. It seems probable that the condition is to be ascribed to the action of the toxic products of the activity of the organisms upon which the pneumonia depends, either directly upon the nervous centers or indirectly through the intermediation of the vasomotor system, causing contraction of the cerebral vessels to such a degree as to compromise the function of the parts controlling the peripheral mechanism. In the cases observed by CHANTEMESSE the pneumonia affected the right side.

Symphysiotomy in America.—DR. ROBT. P. HARRIS read his epoch-making paper on "The Remarkable Results of Antiseptic Symphysiotomy" before the American Gynecological Society at its seventeenth annual meeting held in Brooklyn on September 20, 1892. (See THE MEDICAL NEWS, October 8, 1892, p. 416.) Ten days later DR. CHAS. JEWETT, of Brooklyn, performed what for a long time was believed to be the first symphysiotomy on the American continent. Three days after this Dr. BARTON COOKE HIRST operated successfully in Philadelphia. (See THE MEDICAL NEWS, October 15, 1892, p. 451.) DR. HARRIS, to whom so much credit is due for the revival of the procedure, has by his persistence unearthed the fact that the first operation in America was performed on March 12, 1892, more than six months before his paper was read, and by DR. WM. THOS. COGGIN, then residing in the town of Freedman, Etowah County, Alabama, and now of Athens, Georgia, with a successful result for both parent and child. DR. COGGIN had become familiar with the operation while abroad several years before, and, convinced of its utility and its preference in suitable cases to embryotomy, performed it when the opportunity arose. It transpires that DR. COGGIN was anticipated only a short time, by PROF. PINARD, of Paris, in the performance of the first symphysiotomy outside of Italy. PINARD operated on February 4, 1892, seven weeks before COGGIN, the mother recovering, the child dying. From a paper read by DR. HARRIS at a recent meeting of the Philadelphia Obstetrical Society, we learn that in the year 1892, symphysiotomy was performed throughout the world in 81 accessible cases, with 11 maternal (and 24 fetal) deaths, distributed as follows: France 37 operations, with 6 deaths; Germany 11, with 2 deaths; Austria 6, with 1 death; Italy 9 and the United States 8, with no death; Russia 4, with 1 death; Brazil, Ireland, Switzerland, Holland, Canada and India each 1, with 1 death, in the Holland case. In the first six months of 1893 there were more symphysiotomies than in the whole of 1892, and the record of the year will probably reach two hundred, or more than the number of Cesarean and Porro-Cesarean cases of the world together.

As far as ascertained, there were twenty-seven symphysiotomies in the United States in 1893, and forty operations in North and South America, with four women and nine children lost, a maternal mortality of 10 per cent. There have been twelve operations in Philadelphia, or one-third of those in the United States. The operation has been performed in ten States and by twenty-six operators. Twenty-eight of the cases were in large cities.

Privileged Communications.—It is the object and purpose of the law to enable a patient to make a full statement of his physical infirmities to his physician, with the knowledge, says the Supreme Court of California, in the case of Flint's Estate, that the law recognizes the communications as confidential, and guards against the possibility of his feelings being shocked, or his reputation tarnished by their subsequent disclosure. To him the considerations are even more weighty that the privilege remain inviolate after he has gone to his grave, for his good name is left behind, deprived of his protecting care. His rights are not buried in the grave, and heirs and devisees quarrelling among themselves over a division of his patrimony should, in justice to his memory, not be allowed to waive the privilege. Consequently, the court holds that a statute which provides that, "a licensed physician or surgeon cannot, without the consent of his patient, be examined in a civil action as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient," rests upon a sound public policy, and cannot be waived by an heir seeking to set aside a will by proving by an attending physician that he prescribed for the testator for mental trouble. Reference is made to New York State, where there is a similar law, except that it provides that the privilege is present, unless "expressly waived by the patient," and it is uniformly held by the courts that the patient alone can waive the privilege, and when such patient is dead the matter is forever closed.

This would also seem to be the doctrine of many of the other States. But in Michigan, Missouri, and Indiana there are decisions under quite different statutes, which can, perhaps, give an heir power to waive the privilege. And in some other States the legal representative, the administrator, can waive it.

Typhoid Fever without Intestinal Lesions.—If it be shown that the affection most commonly known by the names of typhoid fever and enteric fever may exist in the absence of fever and without the presence of intestinal lesions, it would seem as if some more accurately descriptive name were needed. We have on a previous occasion pointed out the occurrence of apyretic typhoid fever, and evidence is not wanting that typhoid fever may exist without intestinal lesions. Three cases of the kind last mentioned have been reported by KARLINSKI (*Wiener medicin. Wochenschr.*, March 14, 21, 1891), and recently another by DU CAZAL (Soc. Méd. des Hôp., April 7, 1893; *Rev. des Sci. Méd.*, No. 85, p. 172). The last was that of a patient who for three weeks presented the symptoms of classic typhoid fever: headache, epistaxis, meteorism, rose-spots, continued fever, and albuminuria, with the development of bilateral pneumonia on about the fifteenth day. The case terminated fatally and upon post-mortem examination the lungs were found almost completely hepatized and the spleen enlarged, while the intestines and the mesenteric glands were perfectly uninvolved. Bacteriologic examination of the spleen, however, demonstrated the presence of typhoid-bacilli in pure culture. Cases of this kind must be considered as analogous with those of the exanthemata in which the cutaneous eruption is wanting.

Variolin.—It has come to light that in a neighboring city, in which wisely all school-children must be protected by vaccination or a previous attack of smallpox, some of the children have been treated "by the homeopathic administration of variolin in a highly potential state." Is it possible that the public will insist upon the inevitable sacrifice that must occur among those so treated in case of an epidemic of smallpox in order to demonstrate the fallacy and the absurdity of so-called homeopathic principles and practice?

REVIEWS.

SURGERY. By BERN B. GALLAUDET, M.D., Demonstrator of Anatomy and Clinical Lecturer on Surgery, College of Physicians and Surgeons, New York; Visiting Surgeon, Bellevue Hospital, New York; and CHARLES N. DIXON-JONES, M.D., Assistant Surgeon, Out-patient Department Presbyterian Hospital, New York. Being the final volume of the "Students' Quiz Series," edited by BERN B. GALLAUDET, M.D. 12mo, pp. 291, with 149 illustrations. Philadelphia: Lea Brothers & Co., 1893.

THE conviction is expressed by Dr. Gallaudet in the preface to this little book, that a "book written not as a compend or digest of surgery, but rather as one which would *explain*, would prove of advantage." As a consequence of this, one is impressed by the difference between the descriptive character of the replies to the questions which are given, and the dogmatic statements usually constituting the substance of books of this class. The idea is undoubtedly a happy one, and the result is that the book is not only readable, but that the facts which it presents to the student are set forth in such a manner as to appeal to his reason as well as to his memory, and, therefore, the more easily and permanently impressed upon him. The danger, so often incurred in "compends," of encouraging the acquisition of a superficial knowledge of the subject is also, as far as possible, avoided.

The style of the book is clear as well as compact. Each subject that it embraces we find fairly dealt with. Among the sections which we would especially commend for clearness and thoroughness are those upon Surgical Bacteriology, Diseases and Injuries of the Brain, and Diseases of, and Operations on, the Abdominal Viscera. The illustrations, of which there is a goodly number, are excellent and well selected, and the tabular presentation of many subjects will enable the student to fix the facts more readily in his mind. We do not notice any important omissions. One or two points which strike us are that, in speaking of elastic compression by the Esmarch strap, in the management of arterial wounds, it would have been well to have said a word of caution against the undesirable results sometimes obtained from its being too long kept upon a limb; and another is, that in mentioning the operations for hemorrhoids nothing is said of the "clamp and cautery" operation, a procedure which has many advocates among practical surgeons.

The book is up to the times, and well fulfils its object. We are sure that it will soon acquire the popularity it deserves.

A MANUAL OF PRACTICAL HYGIENE, DESIGNED FOR SANITARY AND HEALTH OFFICERS, PRACTITIONERS, AND STUDENTS OF MEDICINE. By W. M. L. COPLIN, M.D., Adjunct Professor of Hygiene at Jefferson Medical College, etc., and D. BEVAN, M.D., Instructor in Hygiene at Jefferson Medical College, etc. 8vo, pp. 441, and index. Philadelphia: P. Blakiston, Son & Co., 1893.

SCIENCE is cosmopolitan, and it is, therefore, not wholly commendable that one should note the nationality of a scientific work, but it is a matter of gratification that so useful and creditable a text-book as this is of American authorship. The work has been long in preparation, and a perusal of it shows that the delay has not been due to inaction, but to a desire to collect and properly arrange the vast amount of data of a rapidly growing science. The authors are both practical workers in the bacteriologic laboratory and teachers of hygiene, and are, therefore, enabled to give in concise and correct form the essential features of all microbes now known to be causally connected with diseases in man. Dr. Bevan has skilfully drawn, and the printer has skilfully printed in colors, the actual outlines of the important species. We must note here a commendable detail, namely, that in the chapter on Bacteria the drawings are, with one exception, drawn to a uniform scale of enlargement, which is most useful to students, who always have difficulties in comprehending these minute magnitudes. Equal praise cannot, however, be given to some of the details in the arrangement of the topics in this part. A succession of

Tetanus, Tinea Versicolor, and Tuberculosis suits the index but not the matter of a text-book.

The authors express freely and positively their opinions on disputed questions. It may be a question, however, if they are not too sanguine or too severe in some measures. Thus, we are told that marriage between tuberculous individuals should be prohibited, and association with the non-infected rendered impossible. "Paper," says a German proverb, "is patient," and it is not likely that simple dogmatic statements like these will work any good. Moreover, Cornet, in his elaborate paper, has shown that a great deal may be done toward rendering the tuberculous patient harmless to those around him.

It is gratifying to note that considerable care has been taken with the terminology; chemic terms are given mostly in the approved modern forms. A book like this has a considerable missionary function, and can do a great deal of good in promoting correct phraseology in chemistry and biology, in which medical men are not always exact.

We must note before leaving the matter the extended collection of data on the climate of various parts of the United States. The collection of these data has involved much labor.

The publishers' part has been well done, and we can feel sure that the book will quickly assume an honorable position in the field to which it is dedicated.

A TEXT-BOOK OF PHYSIOLOGICAL CHEMISTRY. By OLOF HAMMARSTEN, Professor of Medical and Physiological Chemistry in the University of Upsala. Authorized Translation from the Second Swedish and from the Author's Enlarged and Revised German Edition. By JOHN A. MANDEL, Assistant to the Chair of Chemistry in the Bellevue Hospital Medical College, etc. First edition, first thousand. 8vo, pp. x, 486, and index. New York: John Wiley & Sons.

MUCH valuable matter in applied organic chemistry is presented in Swedish and Dano-Norwegian literature, which finds its way but slowly and imperfectly into English, in consequence of the limited knowledge of the Scandinavian languages possessed by medical men in this country and in England. Hammarsten, Sebelien, and Kjeldahl have been especially noted for their practical researches in physiologic chemistry. The present treatise is, therefore, welcome, and proves to be an excellent summary of important facts of the science. The author's preface to the original Swedish edition is not given, but that to the German edition is, and in it he calls attention to the fact that the work is not intended as a detailed text-book, and that the arrangement of the matter is made necessary by the manner in which the subject is taught in Sweden, as laboratory practice in physiologic and pathologic chemistry is obligatory with medical students. The work is, however, not a manual of laboratory practice alone. Full space is assigned to descriptive matter. The analytic and practical parts are distinguished by special type.

In an introduction covering twelve pages the author discusses the general chemistry and physics of vital processes, and furnishes us with a clear and interesting sketch of the important actions produced by organized and formless ferments, *i. e.*, microbes and enzyms, especially the hydrolytic actions. Reference is also made to the nature of antiseptics, but the statement that salicylic acid does not noticeably interfere with the action of enzyms is not invariably applicable. The subject of the toxic products of putrefaction and physiologic action is also concisely and clearly presented. The chapter on milk is highly commendable, giving all the important and established data about cow's milk, as well as human milk. We note that the theory that the fat-globules are surrounded by an albuminous envelop seems to be untenable.

Over one hundred pages are devoted to the urine, thus enabling the author to give an elaborate account of the normal and abnormal conditions of that secretion. Many tests are given, but the translator recognizes that the chapter is rather too extended for the practical workers, and suggests a reference to smaller manuals for the quick and clinical methods.

The work, taken as a whole, is a valuable addition to the available sources of information for teachers of physiology and medical chemistry. The translation is well done, but the chemic terms are not always satisfactory. Such terms as "cholesterin," "benzol," "glycerin," should be represented by their modern forms, "cholesterol," "benzene," "glycerol."

In typographic execution the book is not especially pleasing. The impression is too heavy, and the practice of printing all proper names in small capitals is not to be commended.

A SYSTEM OF GENITO-URINARY DISEASES, SYPHILOLOGY, AND DERMATOLOGY. By Various Authors. Edited by PRINCE A. MORROW, A.M., M.D., etc. With illustrations. In three volumes. Vol. II: Syphilology. 8vo, pp. 917. New York: D. Appleton & Co., 1893.

LIKE its predecessor, this large and handsome volume is mainly the work of New York men, fifteen of its twenty-three authors claiming residence in that city.

Not many years ago syphilis was a leading topic in the minds of the profession, but of late it has been largely overshadowed, or rather crowded out, by the great advances made in other directions. It is well, perhaps, that interest should be revived in it; but we do not think that the book before us is an important addition to the literature of the subject, calculated to eclipse by its superior merit the admirable standard works already existing. Of course, there have been within the last two decades, in Europe especially, some valuable records of observation and experiment, which seem to be freely quoted in these pages. But the reader will not, in our opinion, find that much progress has been made in practical every-day matters.

In his preface the editor says: "Modern bacteriological researches have given us a clearer conception of the important rôle played by microörganisms in the production of syphilitic phenomena. While the theory of the bacterial origin of syphilis rests upon hypothesis rather than upon absolute demonstration, yet the general recognition of a specific microbe as the essential etiological factor of the action of its toxins upon the tissues, and of the pathogenetic influence of pyogenic microbes, has thrown a flood of light upon the interpretation of many of the morbid processes of syphilis." We must confess our

inability to understand this glittering generality, and our doubt as to the value of a theory which rests upon an hypothesis. Nor can we find in the body of the work evidence of any such brilliant illumination. Our conviction remains that syphilis is as yet a disease the phenomena of which can be described but not explained; and that the bacteriologic laboratory has done hitherto little, if anything, to enlighten this field of research. It is still to clinical experience that the physician must look for the knowledge which will enable him to recognize and combat this versatile enemy.

The arrangement of the subject is good, and will be found convenient by the reader. Chancroid is very properly assigned a separate chapter at the end of the book.

We note occasional awkward slips of style and stilted modes of expression. Thus on page 289: "Syphilis does not produce tuberculosis or rhachitis, though the latter has been affirmed of rhachitis by Parrot." And on page 663: "Enough has been said to substantiate the fact that it is not an irrelevant matter for a person to be adjudicated a syphilitic."

Perhaps the best article in this work is that by White, of Philadelphia, on the treatment of the disease; it is very full, clear, and practical, or as our English brethren are wont to say, helpful. Another of much merit is by Armstrong, on "Syphilis in its Relation to Public Health," and "Visceral Syphilis" is ably discussed by Councilman.

The illustrations are numerous, and for the most part very good; some of them are strikingly so.

A TEXT-BOOK OF PHYSIOLOGY. By MICHAEL FOSTER, M.D., F.R.S., Prelector in Physiology in the University of Cambridge; Fellow of Trinity College, Cambridge, Eng. New (fifth) American from the fifth English edition, thoroughly revised, with Notes and Additions. In one octavo volume, 1083 pages, with 316 illustrations. Philadelphia: Lea Brothers & Co., 1893.

No better recommendation can be desired for a medical book than the knowledge that a large edition has been exhausted in two years. The fourth edition was published in 1891, and now the fifth comes to us, revised to date in all the branches of this fundamental science of medicine. Prof. Foster's text-book differs from others in that it attempts to impart a general knowledge of the human body before it begins to specialize the various functions. We all know how difficult it is to teach genuine physiology to students who have not had any previous instruction in the science, because the elucidation of almost any one of the physiologic phenomena presupposes the knowledge of one or more of the general features influenced by or influencing the subject under discussion, and in this respect Prof. Foster's book seems to take a step in the right direction. When a book is equally well written throughout in a fair conservative spirit, it is always difficult to select some one part, but we are glad to find in the chapter on Absorption a final definite statement which relegates the often quoted and often discussed *physical* diffusion and osmosis to well-deserved oblivion. Prof. Foster says: "Diffusion which takes place in a living cell is so different from ordinary diffusion through a dead membrane that it is undesirable to speak of it by the same name, for the passage of material through the pores of a living cell takes place according to laws quite different from that of ordinary diffusion." It is high time that the *physical* theory of life were left out of our medical text-books.

We can heartily recommend the book to the general practitioner as well as to the medical student; its typographic outfit is of the customary high standard of the publishers; the illustrations are numerous, many being original, and in spite of its 1100 pages it forms a volume of convenient size.

NEW YORK COUNTY MEDICAL ASSOCIATION, STATE OF NEW YORK. REGISTER OF MEMBERS: MANUAL OF INFORMATION. New York: Printed by the Association, 1893.

THIS little publication contains an official list of the members of the New York County Medical Association for the year ending June 30, 1893, together with the names of other practitioners of rational medicine, thus making as complete a list as can be obtained of all regular physicians resident in the city and county of New York. In addition there will be found interesting information concerning the New York County Medical Association, the New York State Medical Association, the American Medical Association, the Pan-American Medical Congress, and International Medical Congresses. In the schism that exists in the profession of New York State, the County Association recognizes the authority of the Code of Ethics, and maintains its adherence to the American Medical Association. That the Association is in a flourishing condition needs no better demonstration than the fact that during the preceding year its membership was augmented by a net increase of 170. There remains but to add the warmest commendation for the course the Association has pursued.

CORRESPONDENCE.

AN OPPROBRIUM OF MEDICINE.

To the Editor of THE MEDICAL NEWS,

SIR: The chief advance in medical science of late years has consisted, so to speak, in retrogression. This looks like a paradox, but in reality it is a statement consistent with reason, as I shall endeavor to show in a clear and conclusive manner.

At the commencement of the nineteenth century there was an opinion generally prevalent amongst the medical faculty, practically at least if not theoretically, that every disease possessed a distinct constitution of its own; that it was, in fact, a separate entity; a parasite, like the mistletoe, fattening on the life-juices of its involuntary host. Between many of the manifestations there were points of resemblance, and certain signs and symptoms were common to nearly all; but each malady nevertheless stood firmly on its own bottom; and was not to be mistaken for, or confounded with, any of its congeners.

The brain of a medical practitioner a hundred years ago might have been likened to a sheet of paper divided longitudinally into two unequal parts. On the narrow side there was a formidable string of names, representing

diseases; and on the other an equally portentous array of antidotes. The enemy's forces were enumerated *seriatim* on the left, and on the right there was inscribed a detailed list of the ammunition by means of which they were to be routed and destroyed. It is true that for each ailment in particular there did not exist a special remedy warranted to slay or at all events scotch the foe, but an attempt was made in the desired direction by combining many drugs in one lengthy prescription. The medical general fired off a salvo at the invader; bringing his case-shot to bear in the hope that some of the numerous missiles therein contained might reach the mark. If one missed, another might hit, and it was fervently hoped that, with luck, the daring intruder would be placed *hors de combat* as a result of the maneuver.

By slow degrees this happy-go-lucky state of affairs began to die away. Diseases ceased to be treated as though they were living creatures; the natural ills that flesh is heir to grew to be regarded as simply the result of a disordered system—whatever that might mean; and medicines, no longer esteemed as antidotes, fell completely into disrepute. It was the apotheosis of *laissez-faire*. Expectancy was the god of the moment, and masterly inaction became the order of the day. Here was change with a vengeance; but the triumph of the everlasting nay did not long endure. Reaction was inevitable, and it is under that reaction we are now suffering.

Disease has once more become an entity! Every separate affection has its own distinctive microbe—the cause of all the trouble, the *fons et origo malorum!*

This, many will think, is bad enough, but worse is to follow. Homeopathy, so long well-nigh moribund, is now absolutely rampant. The only way to combat these nocent microbes is by opposing them with armies of their own kind, in all probability equally mischievous. "Set a bacillus to catch a bacillus" is the cry of the *fin de siècle* physician, thanks to his researches in "the dead-house, the rabbit pen, and the laboratory."[1] Nature and the clinique are allowed to go by the board, and herein lies the opprobrium alluded to at the commencement of this article.

Having thus ended the general portion of my thesis, I crave permission to draw attention to one disease in particular, wherein no progress whatever has been made of late years, whether as regards etiology or treatment, in consequence, as I believe, of universal attention being directed toward microbes, and toward microbes alone.

The disease I refer to is deafness. It would be impossible to imagine an affection calculated to render life less worth living, but that is not the point I am at present anxious to elucidate. My object will, perhaps, best be attained by narrating a case which from personal knowledge I guarantee as perfectly authentic and unexaggerated.

Some two years ago the patient, who was then living in Egypt, first noticed, at the age of fifty-one, that he was slightly hard of hearing; having previously, all his life, enjoyed perfect possession of the sense, and being in fairly good health at the time. The deafness continued for about six weeks, in both ears alike; but it was very trifling, and did not in the least interfere with social intercourse. Then, suddenly, without any apparent cause, what he describes as "unbearable" tinnitus set in on the left side, the prominent feature being an exaggerated pulsation-sound, synchronous with the heart's action. This commenced during the night, and the next morning the sufferer was completely deaf in the left ear. The tinnitus gradually became less marked, and for ten days matters remained *in statu quo*. In the mean time, however, a medical man was consulted. He duly examined the ears and pronounced both drums intact, save that they were excessively indrawn and tense, with the ossicles projecting prominently. The treatment consisted in catheterization of the left Eustachian tube, with insufflation on both sides according to Politzer's method. There was no improvement whatever. Then the doctor proceeded to pass a catheter into the right Eustachian tube, and according to the patient the *immediate* result was total deafness on that side also, accompanied by what he describes as a sensation as though a fluid were being poured out into some cavity inside his right ear. Since then he has remained completely deaf on both sides. He can detect sharp metallic sounds readily, but is quite unable to hear the human voice even when it is conveyed through the most powerful trumpets or tubes. At no time throughout the case was there the slightest giddiness or loss of conciousness; neither did he ever experience any pain.

The patient then returned to England and consulted a well-known London specialist, who ordered him iodid of potassium in extra-large doses, with blistering, followed by a weak mercurial inunction, behind the ears. It must here be noted that there is no history of syphilis in the case; and the most careful examination has failed to reveal the existence of any traces of that disease. This treatment was kept up for three months, without the slightest benefit as regards the deafness, or the tinnitus which, it should have been mentioned, was the most distressing part of the complaint. The sufferer was then induced to consult another specialist, his friends being of opinion that the potash was gradually bringing him to death's door. The second professor made a most exhaustive study of the case, and came to the conclusion that the portion of brain presiding over the sense of hearing was at fault. He recommended phosforus; but the only result of a prolonged course of that powerful medicament was a totally unnecessary and undesired stimulation of the generative organs.

Having had enough of specialists, my subject next consulted a general practitioner who happened to be a great believer in iron as a universal panacea. He prescribed the tincture of the perchlorid with Epsom salts.

It must be allowed that this treatment, which was persevered in for a lengthened period, had a slightly beneficial effect on the deaf man's general health, but his local affection remained precisely *in statu quo*.

The next essay was electricity pure and simple, under the guidance of a specialist who said there was just a chance of its doing good if persevered in, but that the odds were greatly against it. For four long months the battery was duly applied twice a day for twenty minutes at each sitting, but the effect was absolutely *nil*. Since then the patient has abandoned all radical treatment in despair, nor am I able to suggest any medical course that

[1] Wallian: THE MEDICAL NEWS, November 11th, 1893.

would seem to afford even the slightest hope of success. The tinnitus is the most troublesome symptom, but it is rendered bearable by opium. But for this truly named drug the unfortunate man says he does not think he could bear up against the incessant, brain-wearing noises.

The question I should like to ask now is: Would an operation afford any prospect of cure? Would washing out the middle ear be likely to give good results? The patient himself says that if, when the deafness first came on, his head had been shaved and repeatedly blistered, he believes it would have led to the absorption of the effusion which he feels confident has taken place somewhere inside his head.

I should have said that when the deafness first made its appearance my subject was exposed to a great deal of annoyance and worry. His eyesight and sense of smell are unaffected, and his general health and bodily activity quite unimpaired.

AN ANGLO-EGYPTIAN OFFICIAL.

NEWS ITEMS.

The Congress of American Physicians and Surgeons will be held in Washington, D. C., May 29, 30, 31, and June 1, 1894. The following preliminary program has been arranged:

May 29th.

3 P.M. Congress opened by the Chairman of the Executive Committee.

From 3.30 to 5 P.M. General Session of the Congress under the direction of the Association of American Anatomists.

"Morphology as a Factor in the Study of Disease." Opened with a paper by Dr. Harrison Allen, and discussed by Dr. Thomas Dwight, Dr. Frederick H. Gerrish, Dr. Frank Baker, and Dr. Burt G. Wilder.

May 30th.

From 2 to 3.30 P.M. General Session of the Congress under the direction of the American Climatological Association.

"Sewer Gas." The Bacteriology, by Dr. Alexander C. Abbott. As a Cause of Disease, by Dr. Abraham Jacobi.

From 3.30 to 5 P.M. General Session of the Congress under the direction of the American Dermatological Association.

"The Distribution and Control of Leprosy in the United States." The Distribution, opened with a paper by Dr. J. Nevins Hyde and discussed by Dr. William A. Hardaway and Dr. James E. Graham. The Prophylaxis and Treatment, with a paper by Dr. James C. White, and discussed by Dr. George H. Fox, Surgeon-General W. C. Wyman, U. S. M.-H. Service, and Dr. Joseph D. Bryant.

7 P.M. Dinner to the Guests of the Congress at the Arlington Hotel.

May 31st.

From 2 to 3.30 P.M. General Session of the Congress under the direction of the American Association of Genito-urinary Surgeons.

"Nephritis in its Surgical Aspects." Opened with a paper by Dr. Edward L. Keyes, followed by a paper from Dr. George M. Sternberg, Surgeon-General United States Army, on The Bacteriology of Nephritis, and discussed by Dr. George Chismore, Dr. L. Bolton Bangs, Dr. Francis S. Watson, and Dr. W. N. Wishard.

From 3.30 to 5 P.M. General Session of the Congress under the direction of the American Gynecological Society.

"The Conservative Surgery of the Female Pelvic Organs." Papers will be read by Dr. William M. Polk and Dr. William Goodell.

7.30 P.M. Address by the President of the Congress, Dr. Alfred L. Loomis, on The Influence of Animal Experimentation on Medical Science. To be followed by a Reception.

June 1st.

1.30 P.M. Business Meeting of the Congress.

From 2 to 3.30 P.M. General Session of the Congress under the direction of the American Laryngological Association.

"The Surgery of the Accessory Sinuses of the Nose." To be discussed by Dr. F. H. Bosworth, of New York; Dr. J. N. Mackenzie, of Baltimore; Dr. J. H. Bryan, of Washington, D. C.; Dr. J. O. Roe, of Rochester, N. Y., and others.

From 3.30 to 5 P.M. General Session of the Congress under the direction of the American Neurological Association.

"The Influence of Infectious Processes on the Nervous System." Pathology and Etiology, by Dr. James J. Putnam. The Relation to General Nervous Diseases, by Dr. E. C. Seguin. The Relation to Mental Disease, by Dr. Charles K. Mills. The Therapeutics, by Dr. F. X. Dercum.

Von Rosthorn has been made Ordinary Professor of Obstetrics and Gynecology in the German University of Prague.

BOOKS AND PAMPHLETS RECEIVED.

Des Polypes de la Cloison des Fosses Nasales. Reprinted from Annales de la Policlinique de Paris, 1893.

A Rational Treatment of Prostatic Obstruction in Old Men. By G. Wiley Broome, M.D. Reprinted from the St. Louis Medical Review, 1893.

Children's Rights. An Address. By I. N. Love, M.D. St. Louis, Mo., 1893.

The Value of the Ophthalmometer in the Determination of the Axis and of the Amount of Astigmatism. By Louis J. Lautenbach, M.D., Ph.D. Reprinted from the New York Medical Journal, 1893.

Suppurative Appendicitis. By L. H. Laidley, M.D. Reprinted from the Journal of the American Medical Association, 1893.

The Technique and Management of Pelvic Surgical Cases. By A. V. L. Brokaw, M.D. Reprinted from the Annals of Gynecology and Pediatry, 1891.

The President's Address. Delivered before the Annual Meeting of the American Gynecological Society, May 16, 1893. By Theophilus Parvin, M.D. The Union of Obstetrics and Gynecology. By Prof. F. Winckel, M.D. Reprinted from Vol. XVIII. Gynecological Transactions, 1893.

Therapeutical Superstition. By George T. Welch, M.D. Reprinted from the Transactions of the Medical Society of the State of New Jersey, 1893.

Inguinal Hernia in the Male. By Henry O. Marcy, A.M., M.D., LL.D. Pamphlet. Boston, 1892.

Witty, Wise, and Wicked Maxims, with a Preface. By Henri Pène Du Bois. New York: Bretano's, 1892.